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County

Borough  of Bolton

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR

1930.

BOLTON
[illegible]

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Public Health Department,

Bolton,

August 6th, 1931.

To the Chairman and Members of the Public Health Committee.

Ladies and Gentlemen,

I have the honour to submit my annual report for 1930.

I have much pleasure in stating that the adverse conditions of 1929, conditions entirely beyond human control, having passed away, Bolton showed herself in 1930 to be one of the healthiest industrial towns in the country.

Bolton had in 1930 an infantile mortality of 69. Of the fifteen large towns of Lancashire only two had a lower infantile mortality-rate.

Bolton's death-rate in 1930 was 12·4, the fifth lowest of the Lancashire manufacturing towns.

The town was in 1930 remarkably free from any serious epidemic disease. The smallpox outbreak which began in the last quarter of 1929 was completely stamped out early in 1930.

The population of Bolton given by the census taken in April, 1931, has come as a surprise to everyone. It makes some of our problems almost incomprehensible.

I desire to record my sincere gratitude for the loyal, able and ready assistance I have had from every member of my staff. No medical officer of health could have been better served.

I desire also to thank very sincerely the Chairman, the Vice-Chairman and the Members of the Public Health Committee, for the kindness and courtesy I have experienced at their hands.

I am, Ladies and Gentlemen,

Your obedient Servant,

C. W. PAGET MOFFATT,

Medical Officer of Health
and School Medical Officer.

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COUNTY BOROUGH OF BOLTON.

Public Health Committee.

THE MAYOR, ALD. H. WARBURTON, J.P.

Chairman—ALD. T. HALSTEAD, J.P.

Vice-Chairman—COUNC. J. W. MAKANT, M.A.

Ald. SIR KNOWLES EDGE, J.P.
„ P. KNOTT, J.P.
„ Dr. E. MONKS, J.P.
„ F. STEEL.
Counc. J. W. ALLANSON.
„ E. BATES.
„ MRS. A. E. DOWLING.
„ SIR T. E. FLITCROFT, J.P.
„ MRS. E. HAILWOOD.
Counc. D. HEAP.
„ W. A. HINDLEY.
„ J. S. LOMAX.
„ Dr. F. R. MALLETT.
„ Dr. R. D. MOTHERSOLE.
„ J. PARKINSON.
„ T. PROFIT.
„ Mrs. H. WRIGHT.

Public Health and Medical Inspection Staff.

School Nurses—
1. Miss R. BODDINGTON, 3 years' Cert.
2. Miss J. ROBBINS, 3 years' Cert.
3. Miss D. WALMSLEY, Cert Midwife and 3 years' Cert.
4. Miss F. G. LEECH, Cert. Midwife and 3 years' Cert.
5. Miss E.A. ASPINALL, Cert. Midwife and 3 years' Cert.

Health Visitors—
1. Miss A. MARSH, 3 years' Cert.
2. Miss E. TANNER, 3 years' Cert.
3. Miss A. STEEPLES, Cert. Midwife, and 3 years' Cert. (Mat. Hosp.)
4. Mrs. E. BLACKBURN, 3 years' Cert.
5. Miss L. WILDE, Cert. Midwife, 3 years' Cert. and New Health Visitors' Cert.
6. Mrs. J. MARTIN, Cert. Midwife, 3 years' Cert. and Cert. for Health Visitors (Board of Education)
7. Miss C. RUDD, Cert. Midwife, 3 years' Cert. and Health Visitors' Cert. (R. San. I.)

Public Health and Medical Inspection Staff—continued.

Artificial Sunlight Operator (part-time)—Miss Marion Charnock, C.S.M.M.G.

Masseuse (part-time)—Miss M. Louie Bruckshaw, C.S.M.M.G.

Matron: Haslam Maternity Home—Miss L. E. Evans.

Matron: Borough Fever Hospital—Miss E. Bateman.

Sanitary Inspectors—1. E Sumner, Cert. R. San. I. and Cert. for Food.
2. T Ormrod, Cert. R. San. I.
3. T. Isherwood, Cert. R. San. I.
4. C. Coop, Cert. R. San. I. and Cert. for Food.
5. H. Barlow, Cert. S.I.B.
6. H. Whitaker, Cert. R. San. I. and Cert. for Food.
7. F. Potter, Cert. S.I.B.
8. D. Allan, Cert. S.I.B.
9. A. Gillibrand, Cert. S.I.B. and Cert. for Food.

Smoke Inspector—C. J. Dawson, Cert. R. San. I., Cert. for Food., and Smoke Inspector's Cert.

Chief Clerk and Sanitary Inspector—
Herbert Daniels, Cert. R. San. I.

Veterinary and Chief Meat Inspector—R. P. Holmes, F.R.C.V.S.

Public Analyst and Bacteriologist—
Harry Hurst, B.Sc. Lond. and Sheff., F.I.C.

Medical Officer for Maternity and Child Welfare (part-time)—
Madge E. Johnson, M.B., Ch.B. Vict.

Assistant Medical Officers of Health and Assistant School Medical Officers—
Isabella Sim, M.B., Ch.B., D.P.H., St. And.
John Litt, M.B., Ch.B.Edin., D.P.H.Liverpool, M.R.C.V.S.Edin.

Assistant Medical Officer of Health and Maternity and Child Welfare Officer—
Mary E. Boullen, M.B., Ch.B., D.P.H. Vict.

Tuberculosis Officer and Deputy Medical Officer of Health—
John McKeague, L.R.C.P., L.R.C.S. Edin., D.P.H. Dublin.

Medical Officer of Health and School Medical Officer—
C. W. Paget Moffatt, M.A. Lond., M.B., B.C., D.P.H. Cantab., M.R.C.S. Eng., L.R.C.P. Lond.

SECTION I.

Natural and Social Conditions.

SUMMARY OF NATURAL FEATURES

—AND—

VITAL AND MORTAL STATISTICS,

1930.

COUNTY BOROUGH OF BOLTON.

Position	Lat. 53° 35′ N., Lon. 2° 27′ W.
Elevation above sea level	230-ft. to 1,450-ft.
Geological Formation : Boulder Clay and Sand over Coal Measures.	
Area in Acres (Land and Inland Water)	15,280
Population (Census 1921)	178,683
Population (Census 1931)	177,253
Population (Mid-yearly estimated population 1929) ...	181,500
Density	11·8
Inhabited Houses (Census 1921)	41,828
Private Families or Separate Occupiers (Census 1921) ...	42,635
New Houses Certified 1930	696
Estimated No. of Houses in the Borough at 31st December 1930	47,295
Rateable Value at 1st April, 1931	£985,476
Sum represented by a Penny Rate (1930-1931) ...	£3,812-18s.-2d.
Births	2,514
Birth-rate	13·8
Deaths	2,259
Death-rate (Crude)	12·4
Death-rate (Registrar General's)	12·0
Average Death-rate (1921-1930)	13·5
Infantile Mortality	69

SUMMARY—Continued.

Neo-natal Death-rate	34·6
Maternal Death-rate	6·7
Epidemic Death-rate (seven chief diseases)...	·25
Diarrhœa & Enteritis (under 2 years), Death-rate per 1,000 Births	10·7
Phthisis Death-rate	·62
Other forms of Tuberculosis, Death-rate	·19
Respiratory Death-rate	1·6
Rainfall (Av. 1887-1930—44·313")	52·878"

107 COUNTY BOROUGHS AND GREAT TOWNS—

Birth-rate	16·6
Death-rate	11·5
Infantile Mortality	64
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 Births	8·3

ENGLAND AND WALES—

Birth-rate	16·3
Death-rate	11·4
Infantile Mortality	60
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 Births	6·0

VITAL STATISTICS.

Population.

The Registrar-General's estimate of the population of Bolton for 1929 was 181,500. The return of the census taken in April, 1931, was 177,253.

The census taken in 1921 gave a population of 178,683.

This population was corrected by the Registrar-General to 182,200.

The recent census return comes, I think, as a surprise to everyone in Bolton.

The census population gives the number of inhabitants per house in Bolton as 3·74, a really surprising figure.

STATISTICS OF LIFE AND DEATH.

This section of my report for 1929 was a gloomy one. In 1929 the infantile mortality was 103, and the death-rate was 15·4.

I am glad to be able to report that the gloom, due to climatic conditions beyond human control, has entirely passed away.

For 1930 the death rate was 12·4, and the infantile mortality-rate 69. Of the fifteen large towns of Lancashire we have the fifth lowest death-rate and the third lowest infantile mortality.

The birth-rate is again lower, 13·8 as compared with 14·2 in 1929. Can one regret this ?

Bolton had 2,259 deaths in 1930 and 2,514 births, an excess of births over deaths of 255.

Infantile Mortality.

The Neo-natal death-rate is the death-rate of infants during the first four weeks of life. These deaths result very largely from causes at work before the birth of the child.

Causes of Deaths under Four Weeks, 1930

Causes of Death.	Under 7 days	7 and under 14 days	14 and under 21 days	21 and under 28 days	Total under 28 days
Icterus Neonatorum	1	—	—	—	1
Convulsions	1	—	2	—	3
Bronchitis	—	—	—	—	—
Pneumonia (all forms)	—	—	—	1	1
Diarrhœa	—	—	—	—	—
Enteritis	—	2	1	—	3
Syphilis	—	—	—	—	—
Suffocation	—	—	—	—	—
Injury at Birth	4	1	—	—	5
Atelectasis	4	1	—	—	5
Congenital Malformations	7	—	—	—	7
Premature Birth	39	1	4	4	48
Atrophy, Debility and Marasmus ...	3	1	—	2	6
Other Causes	5	1	2	—	8
Totals	64	7	9	7	87

The causes of death in the case of all infants who died during 1930 is given below, as also the causes for 1929.

	1929	1930
Measles	—	—
Whooping Cough	28	3
Erysipelas	—	1
Tuberculous Meningitis	1	1
Meningitis (not tuberculous)	3	1
Convulsions	17	5
Bronchitis	18	7
Pneumonia (all forms)	62	19
Diarrhœa	4	1
Enteritis	12	24
Gastritis	2	2
Syphilis	4	2
Rickets	1	1
Suffocation	—	—
Injury at Birth	5	5
Atelectasis	7	5
Congenital Malformations	11	17
Premature Births	49	50
Atrophy, Debility and Marasmus ...	19	16
Icterus Neonatorum	—	1
Other Causes	23	14
	266	175

The infantile mortality-rate amongst the legitimate children was 66, and amongst the illegitimate 157. These figures show how dependent the new-born child is on the mother's desire that it shall live.

It will be seen from the causes of death what a heavy toll was levied on infant life by respiratory diseases in 1929.

In the following table is given the average infantile mortality for five year periods from 1876 to 1920, and for each year from 1921 to 1930.

Quinquennium.	Average rate.	Year.	Rate.
1876-1880 ...	171	1921 ...	96
1881-1885 ...	169	1922 ...	93
1886-1890 ...	173	1923 ...	85
1891-1895 ...	185	1924 ...	92
1896-1900 ...	173	1925 ...	87
1901-1905 ...	157	1926 ...	101
1906-1910 ...	134	1927 ...	75
1911-1915 ...	128	1928 ...	64
1916-1920 ...	100	1929 ...	103
		1930 ...	69

The infantile mortality-rate is the number of children under twelve months of age who die during the year per thousand live births during the same year. Bolton's infantile mortality-rate for 1930 is very satisfactory.

Maternal Deaths.

Full details regarding these are given in the Maternity and Child Welfare Section.

I regret to say that Bolton's maternal death-rate was high in 1930. The figure was 6·7.

I am confident that in 1930 the provision made for the safeguarding of mothers in pregnancy and childhood was more widespread and better in quality than in any previous year of Bolton's life.

Why, then, has the maternal mortality-rate not reflected the gradual and continuous improvement that has taken place during the past twenty years in the provision made for the care and protection of mothers at the time of childbirth?

I am confident that one reason of considerable importance is the fact that many deaths are now classified as maternal deaths which some years ago would not in the certified cause of death have shown any connexion with childbirth.

Many of the causes of maternal deaths are very imperfectly understood. The effort to prevent them fails because we do not know the cause.

We are doing practically everything in Bolton that the Ministry of Health has recommended for the protection of motherhood.

We have five ante-natal clinics which are well-attended, we have an excellent maternity home, there is adequate hospital accommodation and skilled care for all cases needing operation or presenting serious complications, we pay a consultant whose services are available without fee to any patient whose doctor considers these services desirable. We supply at cost price, or free, according to circumstances, sterilised maternity outfits, and we give, on a very liberal scale, milk to infants and expectant and nursing mothers.

What more can be done ?

In my opinion the most important and most urgent measure that should be taken is to provide a much more highly trained midwifery service. This means that the Midwifery Calling (I should like it to attain to the dignity of a profession) must be made much more attractive from a financial point. Can this be done without creating a State midwifery service ? I doubt it.

Maternal Mortality in Boroughs of Lancashire in 1930.

Barrow-in-Furness ...	3·8	Bury	5·4
Liverpool	3·9	Preston	6·6
Burnley	4·5	**Bolton ... ...**	**6·7**
Blackpool	4·6	Wigan	7·6
Manchester	4·9	Southport	14·6
Oldham	5·2		

Birth-rate, Death-rate and Infantile Mortality in chief Lancashire manufacturing towns.

(Figures taken from the Summaries of the Registrar-General). 1929 and 1930.

	Birth-rate.		Death-rate.		Infantile Mortality.	
	1929	1930	1929	1930	1929	1930
England and Wales	16·3	16·3	13·4	11·4	74	60
107 County Boroughs & Great Towns, including London ...	16·6	16·6	13·7	11·5	79	64
Bootle	20·3	22·3	11·7	10·1	64	57
St. Helens...	20·4	21·5	14·1	11·2	110	79
Warrington	19·3	19·5	14·2	11·4	101	65
Preston	15·5	15·7	13·6	11·8	97	68
Bolton	**14·4**	**13·8**	**15·2**	**12·0**	**101**	**67**
Barrow-in-Furness	17·3	16·0	12·3	12·0	80	71
Salford	16·4	16·5	14·3	12·3	114	75
Burnley	13·9	13·4	14·6	12·5	103	76
Bury	13·6	12·9	15·3	12·7	73	67
Liverpool	21·6	21·7	14·8	12·7	95	81
Blackburn	12·4	12·7	14·7	12·7	84	84
Manchester	17·3	17·2	15·3	12·8	96	78
Wigan	17·6	18·0	14·7	12·9	126	106
Oldham	13·2	13·3	18·1	13·3	114	67
Rochdale	14·3	13·7	16·8	13·9	74	69

In 1930, of the above 15 towns, Bolton has the sixth lowest birth-rate, the fifth lowest death-rate, and the third lowest infantile mortality-rate.

England and Wales.

	1929	1930
Death-rate	13·4	11·4
Infantile Mortality	74	60

107 County Boroughs and Great Towns, including London.

	1929	1930
Death-rate	13·7	11·5
Infantile Mortality	79	64

DEATHS FROM INFECTIOUS DISEASES.

The deaths attributed in Bolton to the various epidemic diseases are shown in the following table for the years 1922 to 1930.

Causes of Death from Epidemic Diseases.

	1922	1923	1924	1925	1926	1927	1928	1929	1930
Smallpox...	—	—	—	—	—	—	—	—	—
Scarlet Fever...	4	6	1	3	1	—	1	4	3
Diphtheria and Memb. Croup	13	10	6	3	14	10	16	8	3
Enteric and Continued Fever	2	—	6	1	1	4	1	1	1
Measles	63	4	12	18	16	21	17	11	4
Whooping Cough	13	11	28	32	37	1	9	85	8
Diarrhœa and Enteritis under 2 years of age...	24	42	33	44	47	20	17	18	27
Erysipelas	6	4	5	9	6	11	9	5	14
Puerperal Sepsis	3	3	6	8	5	4	3	6	6
Cerebro-spinal Fever	—	—	2	1	2	3	4	—	2
Encephalitis Lethargica ...	1	—	17	13	14	10	11	5	4
Influenza...	122	94	88	98	68	147	55	208	42

The seven principal epidemic diseases are:—Smallpox, Scarlet Fever, Diphtheria, Enteric Fever, Measles, Whooping Cough, and Epidemic Diarrhœa (under two years of age). These diseases caused 46 deaths in Bolton in 1930. This is a death-rate of ·25 per thousand inhabitants, and this death-rate is known as the zymotic death-rate. Bolton's death-rate from the above diseases for the years 1920-30 is as follows:—

1920	...	·79	1925	...	·55
1921	...	·62	1926	...	·65
1922	...	·65	1927	...	·31
1923	...	·40	1928	...	·33
1924	...	·47	1929	...	·69
			1930	...	·25

It will be seen that the decrease in the zymotic death-rate of 1930 as compared with that of 1929 is mainly due to the fact that in 1930 there were 8 deaths from whooping cough as compared with 85 in 1929. Whooping cough took a disastrously heavy toll in 1929.

It is still true that no effective treatment for whooping cough has yet been discovered.

Deaths from Tuberculosis.

This has become a pleasant section of the report.

Tuberculosis, the great white scourge, loses ground from year to year, and we are justified in looking forward to its becoming a somewhat rare disease in the not distant future.

There were in 1930 in Bolton 150 deaths due to tuberculosis in all its forms. Of these deaths 114 were due to tuberculosis of the lungs.

The tuberculosis death-rate for 1930 was ·82.

DEATHS AND DEATH-RATES FROM TUBERCULOSIS IN BOLTON IN PREVIOUS YEARS.

Year	Pulmonary Tuberculosis.		Non-pulmonary Tuberculosis.		Tuberculosis (all forms).	
	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate
1915	179	1·03	50	·28	229	1·32
1916	181	1·07	62	·36	243	1·43
1917	189	1·15	62	·37	251	1·53
1918	198	1·23	55	·34	253	1·57
1919	173	·97	37	·20	210	1·18
1920	154	·83	32	·17	186	1·00
1921	161	·88	37	·20	198	1·08
1922	138	·75	40	·21	178	·97
1923	157	·86	47	·25	204	1·11
1924	162	·89	42	·23	204	1·12
1925	151	·83	34	·18	185	1·02
1926	135	·76	29	·16	164	·92
1927	149	·83	33	·18	182	1·02
1928	120	·66	20	·11	140	·77
1929	121	·66	24	·13	145	·79
1930	114	·62	36	·19	150	·82

CANCER.

Cancer causes so many deaths, 240 in Bolton in 1930, and is in many cases such a painful and distressing disease that the anxious interest of the general public in the subject never flags.

Is cancer increasing? It is well to make quite clear what this question means.

The cancer death-rate is increasing, that is the number of persons per thousand of the population who die of cancer is getting bigger.

This increase is mainly, and possibly entirely, due to the fact that the population is becoming an older one. People live longer, considerably longer, than they did 50 years ago, fewer children are born per thousand of the population, and therefore, as cancer is in the main a disease of the later years of life the portion of the present day population specially liable to develop cancer is a much larger fraction of the whole than it was some years ago.

Also, diagnosis improves from year to year, and this improvement in diagnosis makes it obvious that some portion of any apparent increase must be due to the more accurate recognition of the disease.

What specially concerns the individual is the answer to this question: "Am I more likely to develop cancer than if I had lived 50 years ago?"

Not all competent investigators will give the same answer. Some will say yes, some will say no; but amongst those who say yes, not one will say that the chance of the individual developing cancer is increased by more than an almost negligible amount.

In the case of 240 Bolton residents who died in 1930, cancer was given as the cause of death.

The following table shows the number of deaths from cancer, the cancer death-rate, and for purposes of comparison, the pulmonary tuberculosis death-rate in Bolton for the years 1901 to 1930.

Deaths from Cancer in Bolton in the years 1901-1930.

Year.	No. of deaths. Males.	Females.	Total.	Cancer Death-rate.	Pulmonary Tuberculosis Death-rate.
1901	26	71	97	·57	1·69
1902	51	73	124	·73	1·49
1903	32	72	104	·60	1·27
1904	45	88	133	·77	1·28
1905	57	76	133	·76	1·20
1906	40	74	114	·65	1·15
1907	45	75	120	·68	1·05
1908	53	69	122	·68	1·21
1909	60	84	144	·80	1·20
1910	58	92	150	·83	1·08
1911	67	84	151	·83	1·03
1912	80	88	168	·92	·99
1913	72	110	182	·98	·83
1914	77	96	173	·93	.90
1915	78	103	181	1·04	1·03
1916	60	100	160	·94	1·07
1917	73	93	166	1·01	1·15
1918	85	102	187	1·16	1·23
1919	72	104	176	·99	·97
1920	96	107	203	1·10	·83
1921	86	128	214	1·17	·88
1922	88	104	192	1·05	·75
1923	101	113	214	1·17	·86
1924	123	121	244	1·34	·98
1925	108	132	240	1·33	·82
1926	109	127	236	1·33	·76
1927	116	116	232	1.30	·83
1928	119	126	245	1·35	·66
1929	113	91	204	1·12	·66
1930	107	133	240	1·32	·62

The above death-rates are crude death-rates. This means that they are not corrected for the changes in the age and sex distribution of the population.

The following table shows the age and sex distribution of all persons who were certified as having d of cancer in Bolton in 1930. The table shows also the localization of the disease.

DEATHS FROM CANCER, 1930.

Age and Sex Distribution, and Localization of Disease.

Lesion	Sex		AGE															
	M.	F	0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 8
Buccal Cavity	1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	1	...
Jaw																			
Lip	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Mouth	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...
Tongue	7	...	...	...	...	...	...	...	...	...	...	...	...	2	5	...	...	...	...
Tonsil	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	..
	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	..
Total Buccal Cavity ...	14	...	...	...	...	...	...	...	...	...	...	...	1	3	7	2	...	1	..
	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	..
Stomach, Liver, etc,	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..
Fauces																			
Gall Bladder	3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	..
	...	4	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	..
Liver	6	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	2	1
	...	7	...	...	...	...	...	...	...	1	...	...	1	...	1	2	...	2	..
Œsophagus	4	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	..
	...	3	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	..
Pylorus	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	..
	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	..
Stomach	24	...	...	...	...	...	...	...	...	1	...	1	3	6	3	5	5	...	..
	...	22	...	...	...	...	...	...	...	1	...	...	2	3	2	6	4	4	..
Total Stomach, Liver, etc. ...	39	...	...	...	...	...	...	...	...	1	...	3	3	9	4	10	6	2	
	...	37	...	...	...	...	...	...	...	3	...	...	4	4	5	8	5	7	..
Peritoneum, Intestines, and Rectum	1	...	...	..	...	...	...	...	...	...	...	...	...	...	1	...	...	...	..
Cæcum	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	..
Colon	11	...	...	...	...	...	...	...	...	...	...	...	1	2	2	2	3	...	
	...	12	...	...	...	...	...	...	...	...	1	...	1	2	1	1	4	2	..
Intestines	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	.
	...	5	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	2	.
Mesentery	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	.
	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	.
Peritoneum...																			
	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	.
Rectum	8	...	...	...	...	...	...	...	...	...	...	1	...	...	4	...	...	2	
	...	4	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...	...	.
Total Peritoneum, Intestines and Rectum ...	23	...	...	...	...	...	...	...	...	...	...	1	1	3	8	2	3	3	
	...	24	...	...	...	...	...	...	...	...	1	...	1	6	5	3	4	4	.

DEATHS FROM CANCER, 1930.—*contd.*

Lesion	Sex		AGE																	
	M.	F.	0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwds
nale Genital Organs																				
Ovary	...	5	...	...	...	...	...	...	...	...	...	1	3	1	...	...	...	...	...	...
Uterus	...	22	...	...	...	...	...	...	...	2	2	3	3	4	4	1	3	...	...	...
Vulva	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
otal Female Genital Organs...	...	28	...	...	...	...	...	...	...	2	2	4	6	5	4	1	3	...	1	...
:ast	...	30	...	...	...	...	...	...	...	2	...	4	3	2	9	1	5	3	1	...
n	4	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	1
ier Organs																				
Abdomen	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Axillary Gland	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Bladder	5	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	1	1	...
Bone	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Kidney	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Larynx	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
	...	3	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...
Leg	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Lung	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Mediastinum	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Neck	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Neck Glands	3	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...
Pancreas	4	...	...	...	...	...	...	...	...	...	...	...	1	2	1	...	...	...	...	...
	...	3	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...
Parotid Gland	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Pelvis	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Prostate	7	...	...	...	...	...	...	...	...	...	1	...	...	1	2	1	1	1	...	...
Throat	1	...	...	...	...	...	...	...	...	...	...	...	..	...	...	1	...	...	...	...
Thyroid Gland	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Total Other Organs ...	27	...	...	...	...	...	1	...	...	...	1	...	4	5	4	7	2	2	1	...
	...	13	...	...	...	...	...	...	...	1	...	2	1	3	1	2	...	2	1	...
al Males	107	...	...	...	...	...	1	...	1	1	1	4	9	20	23	21	12	9	4	1
al Females	...	133	...	...	...	...	...	...	...	8	3	10	15	20	24	15	18	16	3	1
TOTAL both sexes ...	240		...	...	...	...	1	...	1	9	4	14	24	40	47	36	30	25	7	2

SUMMARY OF THE PRINCIPAL CAUSES OF DEATH, 1930.

	No. of Deaths.	Per cent. of Total Deaths.
General Diseases.		
Whooping Cough	8	·35
Influenza	42	1·85
Pulmonary Tuberculosis	114	5·04
Other Forms of Tuberculosis	36	1·59
Cancer	240	10·62
Rheumatic Fever	23	1·01
Chronic Rheumatism, Osteo-arthritis, Gout	12	·53
Diabetes	30	1·32
Anæmia, Chlorosis	21	·92
Other General Diseases	63	2·78
Nervous System.		
Meningitis	10	·44
Cerebral Hæmorrhage, Apoplexy, etc. ...	93	4·11
General Paralysis of the Insane	5	·22
Other Forms of Insanity	6	·26
Epilepsy	8	·35
Infantile Convulsions	9	·39
Other Diseases of the Nervous System ...	56	2·47
Circulatory System.		
Heart Diseases	366	16·20
Diseases of the Arteries	213	9·42
Other Circulatory	10	·44
Respiratory System.		
Bronchitis	138	6·10
Pneumonia (all forms)	133	5·88
Asthma	10	·44
Other Respiratory	17	·75

DIGESTIVE SYSTEM.		
Ulcer of the Stomach or Duodenum ...	13	·57
Diarrhœa and Enteritis	34	1·50
Appendicitis and Typhlitis	9	·39
Hernia, Intestinal Obstruction	23	1·01
Cirrhosis of the Liver	9	·39
Biliary Calculi	8	·35
Other Digestive	31	1·37
GENITO-URINARY SYSTEM.		
Acute Nephritis	12	·53
Chronic Nephritis	100	4·42
Diseases of the Prostate	16	·70
Other Genito-urinary...	17	·75
THE PUERPERAL STATE	17	·75
MALFORMATIONS	17	·75
DISEASES OF EARLY INFANCY.		
Atrophy, Debility, etc.	17	·75
Premature Birth and Injury at Birth ...	55	2·43
Other Diseases of Early Infancy	10	·44
OLD AGE	90	3·98
EXTERNAL CAUSES...	102	4·51
MISCELLANEOUS CAUSES	16	·70

SECTION II.

1. General Provision of Health Services.

2. Local Acts, General Adoptive Acts, Bye-laws & Regulations.

GENERAL PROVISION OF HEALTH SERVICES IN BOLTON.

The following information regarding these services is given in compliance with the instructions of the Ministry of Health.

1.—Professional Nursing in the Home.

The Bolton Corporation makes an annual grant of £200 to the funds of the Bolton District Nursing Association, and in addition to this the Public Health Committee pays the sum of 1/6 for each visit paid to any one of the following diseases:—puerperal pyrexia, puerperal fever, measles, whooping cough, epidemic diarrhœa, and ophthalmia neonatorum.

The Bolton District Nursing Association provides nursing in the home for all cases other than infectious diseases. In the great majority of cases the nursing is given gratuitously, but in cases where the patient's friends are able to pay, a small fee is asked.

2.—Midwives.

73 midwives notified their intention or practising in Bolton in 1930.

The Local Authority neither employs nor subsidises any midwives.

3.—Laboratory Facilities.

The Local Authority employs a fully qualified whole-time analyst and bacteriologist and provides an adequately equipped laboratory. A full account of the work done by this department is given in this report.

4.—Legislation in Force.

Local Acts, General Adoptive Acts, Bye-laws and Regulations in Force in Bolton.

Local Acts.

Bolton Improvement Act, 1854.
Bolton Improvement Act, 1865.
Bolton Corporation Act, 1872.

LOCAL ACTS.—*continued.*

Bolton Improvement Act, 1877.

Local Government Board's Provisional Orders Confirmation (Abergavenny Union, &c.) Act, 1879.

Bolton Improvement Act, 1882.

Local Government Board's Provisional Orders Confirmation (No. 15) Act, 1893.

Bolton Tramways and Improvement Act, 1897.

Bolton Corporation Act, 1901.

Bolton Corporation Act, 1905.

Bolton Corporation Act, 1922.

Bolton Corporation Act, 1925.

GENERAL ADOPTIVE ACTS.

Part III.—Public Health Acts Amendment Act, 1890. (Adopted—6th May, 1891).

Part IV.—Public Health Acts Amendment Act, 1890. (Adopted—6th July, 1910).

BYE-LAWS AND REGULATIONS.	DATE MADE.
Slaughter-houses	13th Feb., 1867.
Common Lodging-houses	2nd Feb., 1898.
Houses Let-in-Lodgings	2nd Feb., 1898.
Dairies, Cowsheds and Milkshops ...	5th July, 1899.
Management, etc., of High Street Baths	4th Feb., 1903.
Means of Escape in Case of Fire ...	10th Sept., 1908.
Tents, Vans, Sheds and Similar Structures	21st Jan., 1926.
Nursing Homes	20th Mar., 1930.

PARTICULARS OF HOSPITALS USED BY BOLTON RESIDENTS.

5.—In the following table are set forth details of all the hospitals mainly used by Bolton patients. Of these hospitals Townleys Hospital and the Blair Convalescent Hospital are situate outside the area of the County Borough of Bolton.

	Borough Fever Hospitals.		Townleys Hospital.		Wilkinson Sanatorium.		Bolton Infirmary and Dispensary.		The Edmund Potter Hospital.		The Blair Convalescent Hospital.		Haslam Maternity Home.
Situation.	Hulton Lane, Bolton		Farnworth, near Bolton.		Belmont Road, Bolton.		Chorley New Road, Bolton.		Chorley New Road, Bolton.		Bromley Cross, near Bolton.		Chorley New Road, Bolton.
Committee.	Public Health.		Public Assistance.		Voluntary.		Voluntary.		Voluntary.		Voluntary.		Public Health.
Purpose.	Isolation.		General.		Tuberculosis Sanitorium.		General.		Auxiliary Hospital.		Auxiliary Hospital.		Maternity.
	For males	*For females*	*For males*	*For females*	*For males*	*For females*	*For males*	*For females*	*For males*	*For females*	*For males*	*For females*	
Beds available.	61	61	288	292	30	24	120	101	11	32	41	...	
General medical.	...	...	160	153	...	...	6	7	...	20	3	...	
General surgical.	...	...	80	66	...	...	90	69	...	...	32	...	
Children.	...	...	18	17	...	...	24	25	11	12	...	...	
Maternity.	...	...	...	28	...	...	...	...	...	...	...	...	18
Venereal diseases.	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculosis.	12	12	30	28	30	24	...	...			6	...	
Chronic sick.	...	...			...	...	...	...	Children and female patients are sent from Bolton Infirmary to convalesce.				
Mental.	...	...			...	...	...	...			15 beds are used by Bolton Infirmary for its male convalescent patients.		
Mental deficiency.	...	...			...	...	...	...					
Orthopædic.	...	...	Included in general medical. Not separately reserved.		...	...	...	...	...	...	...	...	
Ear, nose and throat.	...	...			...	...	...	...	...	...	...	...	
Puerperal fever and pyrexia.	...	...			...	...	...	...	...	...	...	...	(Cases, if any, transferred to Townleys Hospital).
Ophthalmia neonatorum.	...	...			...	...	...	...	...	...	...	...	
Other notifiable diseases.	49	49	...	...	...	...	...	...	...	...	...	...	
Proportion of beds used by residents outside Bolton.	Nil except on rare occasions by arrangement.		23%		18%		20%		20%		34%		Nil
Arrangements for pathological work.	Specimens examined by Borough Bacteriologist.		Fully equipped department, with assistant.		Sputum examined at Bolton Infirmary.		Hon. Pathologist, Assistant and Apprentice. New Laboratory being erected at a cost of £9,500.		Nil		Nil		Borough Bacteriologist and Public Health Laboratory, Manchester.
Facilities for operative surgery.	Arrangements made for emergency operations.		Fully equipped theatre.		Nil		Three Theatres.		Nil		Nil		Nil
Special departments.	Nil		Radiological, dental, ophthalmic, massage, ear, nose and throat, and artificial sunlight.		X-ray room in course of erection. At present patients are sent to Bolton Infirmary.		Massage, dental, ophthalmic, X-ray, gynecological, ear, nose and throat.		Nil		Nil		Nil
Other information.	**Medical and Nursing Staff.** 1 Medical Supt. (M.O H.) 1 Matron 4 Sisters 5 Staff Nurses 11 Probationers **Consultants.** Called in by M.O.H. if and when required.		**Medical and Nursing Staff.** 1 Medical Superintendent 3 Assistant Medical Officers 1 Matron 2 Assistant Matrons 1 Home Sister 1 Sister Tutor 2 Masseuses 1 Head Night Sister 20 Charge Nurses 7 Staff Nurses 94 Probationers **Consultants.** Ear, Nose and Throat and Ophthalmic Surgeons attend weekly. Dental Surgeon attends fortnightly. These and other Consultants attend if and when required.		Dental Surgeon and Chiropodist attend when required.							**Medical and Nursing Staff.** 1 Medical Supt. (M.O.H.) 1 Assistant Medical Supt. 1 Matron. 2 Sisters. 4 Nurses. (Patients can engage their own doctor; if not engaged, matron has a list of doctors prepared to attend for the Ministry of Health's fees). **Consultants.** Consultant for puerperal fever and pyrexia. Consultants for other conditions called in by M.O.H. acting in agreement with medical practitioners in attendance.

The Bolton Corporation makes, as set forth below, annual grants to hospitals situate both inside and outside Bolton.

	£	s.
Bolton Infirmary	568	10
Manchester Royal Infirmary	139	10
Manchester Royal Eye Hospital	10	5
Devonshire Hospital, Buxton	13	13
St. Mary's Hospital, Manchester	7	0

During 1930 the Bolton Corporation made a special grant of £100 to the funds of the Manchester and District Radium Institute.

The Public Health Committee sends patients to the Manchester and Salford Skin Hospital both for out and in-patient treatment. Payment is made to the Hospital for each case sent.

6.—Maternity and Nursing Homes.

Nursing Homes Registration Act, 1927.

1st July, 1928—31st December, 1930.

	Maternity Homes and Nursing Homes	Maternity Homes only	Nursing Homes only
No. of Homes on the register when the Act came into operation ...	—	3	—
No. of applications for registration	3	1	2
No. of Homes registered	3	1	2
No. of Homes on the register on 31st December, 1930	2	3	1

No orders have been made refusing or cancelling registration.

No applications have been made for exemption from registration.

Since the Act became operative three homes have been closed voluntarily and the registration cancelled.

The six homes on the register at the end of the year provided accommodation for patients as follows:—

Maternity patients	11
Other patients	34

Bye-laws made under the Act of 1927 were approved and adopted by the Council on the 5th February, 1930, and these were allowed by the Ministry of Health on the 20th March, 1930.

7.—Maternal Mortality.

All maternal deaths are inquired into by the Medical Officer for Maternity and Child Welfare, Dr. Mary E. Boullen. She interviews in every case both doctor and midwife and, if the patient has had hospital treatment, a written report is obtained from the Medical Officer or Officers having charge of the case.

8.—Institutional Provision for Unmarried Mothers, Illegitimate Infants and Homeless Children.

Unmarried mothers are admitted to the Haslam Maternity Home and to the Maternity Wards of Townleys Hospital. So far as illegitimate children are concerned they are, in those cases where institutional treatment is desired, excellently provided for at Townleys Hospital. The Hollins Homes of the Public Assistance Committee care for homeless children in an entirely satisfactory manner. As regards all maternity and child welfare services no distinction whatever is made between married and unmarried mothers or legitimate and illegitimate children.

9.—Institutional Provision for the Care of Mental Defectives.

The institutional care of mental defectives is dealt with by the Lancashire Mental Deficiency Act Committee. The quality of the provision made is quite satisfactory, but in quantity it is lamentably inadequate. There are at the present time in Bolton mental defectives whose condition is such as to make life almost impossible for their families, cases which are most urgently in need of institutional care, but which have to remain at home because the institutional provision for these cases is very inadequate.

10.—Ambulance Facilities.

Two motor ambulances are kept at the Borough Isolation Hospital and are available for all infectious cases.

For non-infectious and accident cases, the County Borough of Bolton has provided three ambulances. These ambulances are available for the moving, within the area of the County Borough of Bolton, of all cases of sickness and accident for the moving of which an ambulance is necessary. A small charge is made if the circumstances of those requiring the use of the ambulance justify such charge.

The Public Assistance Committee has four ambulances which deal with all cases needing removal to or from their institutions.

11.—Local Government Act, 1929.

Up to now (26-6-31) no institutions and no medical services (other than vaccination) previously administered by the Guardians have been transferred to the Public Health Authority. They are administered now by the Public Assistance Committee.

CLINICS, TREATMENT CENTRES, ETC.

12.—The following table gives particulars of all clinics and treatment centres administered by the Council of the County Borough of Bolton.

Name of Clinic or Centre	Situation.	Day and Time.	Nature of Accommodation.	By whom provided.
Infant Welfare Centres.				
1. Tipping Street.	The Friends' School Room, Tipping Street.	Monday, 3-0 p.m.	2 Rooms.	Grant to Bolton School for Mothers by the Bolton Public Health Committee. The School for Mothers provides the accommodation. Medical supervision, Health Visitors, Drugs, etc., are provided by the Public Health Committee.
2. James Terrace.	St. Matthew's Mission Room, James Terrace.	Monday, 3-0 p.m.	2 Rooms.	
3. Halliwell.	Halliwell Road Free Church, Halliwell Road.	Tuesday, 3-0 p.m.	5 Rooms.	
4. Grecian Crescent.	Victoria Wesleyan School, Grecian Crescent.	Tuesday, 3-0 p.m.	2 Rooms.	
5. Kensington.	Girls' Club, Kensington Street.	Wednesday, 3-0 p.m.	4 Rooms.	
6. St. Chad's.	St. Chad's School, Belvoir Street.	Wednesday, 3.0 p.m.	3 Rooms.	
7. Saviour's.	Saviour's Church House, Deane Road.	Thursday, 3-0 p.m.	2 Rooms.	
8. Peace Street.	United Methodist School, Peace Street.	Thursday, 3-0 p.m.	3 Rooms.	
Ante-natal Clinics.				
1. St. George's Road.	Bolton School for Mothers, 70 St. George's Road.	Tuesday, 10-0 a.m. and 3-0 p.m.	2 Waiting Rooms, Lecture Room and Doctor's Room.	Do. do.
2. Haslam Maternity Home.	Chorley New Road.	Friday, 10-30 a.m. and 2-0 p.m.	2 Waiting Rooms and Doctor's Room.	Bolton Public Health Committee.
Artificial Sunlight Clinic.				
St. George's Road.	Bolton School for Mothers, 70 St. George's Road.	Mon., Wed. and Fri., 10-30 a.m.	Waiting Room, Examination Room and Treatment Room	Premises—Bolton School for Mothers. Medical supervision and operator—Bolton Public Health Committee.
Massage Clinic.				
Flash Street.	Special School, Flash Street.	Mon. and Thurs. 10-0 a.m. and 2-0 p.m. Wed. and Fri., 2-0 p.m.	2 Rooms.	Premises—Bolton Education Committee. Masseuse—Bolton Public Health Committee.
School Clinic.				
Charles Street.	Charles Street.	**Minor Ailment Clinic.** Mon. to Fri., 9-0 a.m. and 2-0 p.m. Saturday, 9-0 a.m. **Dental Clinic.** Mon to Fri., 9-30 a.m. and 2-30 p.m. Saturday, 9-30 a.m. **Ophthalmic Clinic.** Tuesday and Thursday, 9-30 a.m.	2 Waiting Rooms, Treatment Room, Doctor's Room, 2 Dental Surgeries, Dental Rest Room, Ophthalmic Surgeon's Room, Dark room, Storeroom and Bathroom.	Bolton Education Committee.
Tuberculosis Dispensary.				
Bolton Tuberculosis Dispensary.	Public Health Offices, Howell Croft, North.	Every week-day except Saturday, 9-30 a m Wednesday, 2-0 p.m.	Waiting Room, Doctor's Room and Dispensary.	Bolton Public Health Committee.
Venereal Diseases Clinic.				
Bolton V. D. Clinic.	Public Health Offices, Howell Croft, North.	**For Males.** Monday, 10-0 a.m. and 7-0 p.m. Tuesday, 7-0 p.m. Wednesday, 10-0 a.m. and 7-0 p.m. Friday, 10-0 a.m. and 7-0 p.m. **For Females.** Tuesday. 10-0 a.m. Wednesday, 2-30 p.m. Thursday, 2-30 p.m. and 7-0 p.m. Friday, 2-30 p.m. Saturday. 10-30 a.m.	Waiting Room, Clerk's Room and 2 Treatment Rooms.	Bolton Public Health Committee.
Day Nursery.	41, Arkwright Street.	Mon. to Fri., 7-0 a.m. to 5-30 p.m. Saturday 7-0 a.m. to 1-0 p.m.	Office, Reception Room, Toddlers' Room, Babies' Room, Staff Room, Kitchen, Verandah, Bathrooms, Staff Bedrooms and usual Offices.	Bolton Day Nursery Association. Grant of £575 per annum by Bolton Public Health Committee. (The same Committee also made a special grant during 1930, of £500 towards the adaptation of new premises).

SECTION III.

Sanitary Circumstances

Water.

The sources of Bolton's water supply have been increased by an additional forced well (Bromiley Well) in the millstone grit at Belmont. This well adds 250,000 gallons per day to the available sources of Bolton's water supply.

The quality of the water continued to be excellent, and there was an adequate internal water supply in all houses to which the Bolton Corporation was under obligation to afford supplies.

Closet Accommodation.

The position of Bolton as regards closet accommodation at the close of 1920 and the close of 1930 is shown in the following table.

	Dec. 31st, 1920.	Dec. 31st, 1930.
Fresh-water closets ...	11,062	31,508
Waste-water closets ...	15,219	15,001
Pail closets	6,302	1,312
Privy Middens	10,540	1,010

612 privy middens and pail closets were replaced by fresh-water closets or demolished in 1930.

There are known to be in Bolton 737 privy middens and 475 pail closets which at the present time cannot be converted to fresh-water closets for various reasons, such as absence of sewer, absence of water supply, etc. This, according to the figures given above would leave 1,110 privy middens and pail closets capable of conversion. The survey of privy middens and pail closets on which these figures are based was made many years ago, and the figures are now known to be much too large. A fresh survey will be carried out this year. The Sanitary Inspectors report that there do not remain more than about 150 privy middens and pail closets, the conversion of which to the fresh-water carriage system is not hindered by causes such as those mentioned above.

In the following table is set forth the nature of the closet accommodation in the various wards of the Borough.

Closet Accommodation, 1930.

	No. of Closets Converted or Demolished, 1930.				F.W.Cs. provided in lieu of any other type and additions in new and old houses, 1930.	Present Closet Accommodation, 1930.				Per Cent. on	
	P.M.	Pail.	W.W.C.	F.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	Dry System.	Water System.
Old Borough...	97	395	49	27	640	306	1283	10798	18055	5·2	94·8
Great Lever	10	1	...	...	37	145	...	1104	2504	3·9	96·1
Tonge	2	...	...	...	119	33	...	766	2993	·9	99·1
Astley Bridge	27	...	1	...	83	28	12	498	1799	1·7	98·3
Smithills	2	...	2	...	33	41	2	703	1909	1·6	98·4
Hulton	15	...	...	...	48	22	...	590	1086	1·3	98·7
Darcy Lever-cum-Breightmet	33	...	...	...	112	279	...	181	1060	18·9	81·1
Deane-cum-Lostock	30	...	...	...	241	72	3	212	1115	5·3	94·7
Heaton	...	...	...	...	24	84	12	149	987	7·8	92·2
Extended Borough	216	396	52	27	1337	1010	1312	15001	31508	4·8	95·2

SCAVENGING.

Bolton Cleansing.

The work of street cleansing and watering, gully cleansing, snow removal, refuse collection and disposal is carried out by the Corporation Cleansing Department's own staff.

Street Cleansing.

All main roads and principal streets in the centre of the town are swept daily.

Other principal streets are swept once or twice weekly and by-streets fortnightly.

Street Watering.

Main roads and streets in the busy parts of the town are watered during the summer months, when and as required.

Gully Cleansing.

About 75% of the street gullies are cleansed mechanically.

Two vacuum gully emptiers, "The Yorkshire" and "The Fowler" machines are in use daily, and the work is done in a most cleanly and sanitary manner.

The refuse from the gully is drawn by suction and deposited into a tank body fixed on the machine; the tank is divided into two portions, one to receive the sludge from the gully, and the other contains fresh water for flushing.

After the gully is emptied, it is flushed with fresh water and sealed.

By this method of emptying, the nuisance and objection of putting the sludge on to the street as by the old method is now obviated.

These machines are so constructed that they may also be used for sewer flushing, street washing and watering.

Refuse Collection.

House refuse is collected by motor and horse-drawn wagons fitted with covers ; mainly fixed covers.

Bins are emptied weekly.
Dry ashpits, once every 2 to 3 weeks.
Privies, from 6 to 8 weeks.
Pails, once to three times a week.

Refuse Disposal.

The disposal of refuse is by means of incineration, salvage, tipping, and by rail for agricultural purposes.

Incineration	46%
Salvage and Incineration	17%
Controlled Tipping	29%
Crude Tipping	1%
Agricultural Purposes	7%

SANITARY INSPECTION.

The nature, and to a great extent, the amount of ground covered by the Sanitary Inspectors is shown by the following detailed statement of work done:—

General Inspections.

Houses	19864
Newly-infected houses	660
Schools	25
Common lodging-houses	780
Houses-let-in-lodgings	904
Factories	328
Workshops	535
Workplaces	235
Bakehouses	417
Offensive trades	38
Dairies, Cowsheds, and Milk-shops...	669
Conversion of Closets	4650
Drains...	1429
Miscellaneous...	5602

Nuisances Found.

Houses, workshops, cowsheds, etc., needing limewashing	1236
Houses overcrowded	14
House roofs, walls, floors, etc., in bad repair	1522
Insan. or insufficient closet accommodation	700

Ashpits or pails in bad repair	173
Defective or choked drains	353
Yards in bad repair	113
Animals kept as a nuisance	25
Miscellaneous	1792

ACTION TAKEN.

Letters written	840
Informal notices served	1222
Verbal notices	434
Legal notices served	609

NUISANCES ABATED.

Houses, etc., limewashed	1220
Overcrowding abated	8
House roofs, etc., repaired	1058
Eaves gutters and downspouts repaired	562
Closets converted	604
Ashpits or pails repaired	135
Drains reconstructed (excluding closet conversions)	48
Drains opened, trapped or repaired	321
Yards repaired or flagged	91
Miscellaneous repairs	1018
Miscellaneous nuisances abated	636

DISINFECTIONS.

Houses disinfected	772
Articles disinfected	4897
Articles destroyed	98

COMPLAINTS.

From Public	162
From Factory Inspector	11
Reports on complaints to Factory Inspector	17

PLACES UNDER INSPECTION.

Common lodging-houses	35
Houses-let-in-lodgings	41
Factories	337
Factory Chimneys	246
Workshops and Workplaces	796
Bakehouses	297
Outworkers' Premises	8
Offensive trades	24
Slaughterhouses	33
Cowsheds	355
Milk-shops	426
Public Sanitary Conveniences	23
Travelling Vans	150

Factories and Workshops.

In accordance with the provisions of Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required to make to the Secretary of State for the Home Office the following report which gives in addition to other information, the total number of defects found and notices served.

1.—Inspection.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories ... ... (Including Factory Laundries)	328	9	—
Workshops ... ... (Including Workshop Laundries)	535	17	—
Workplaces ... ... (Other than Outworkers' premises)	235	9	—
Total	1,098	35	—

2.—Defects.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found	Remedied	Referred to H.M. Inspector	
Nuisances under the Public Health Acts:—*				
Want of cleanliness	105	105	—	—
Want of ventilation	1	1	—	—
Overcrowding	—	—	—	—
Want of drainage of floors	2	2	—	—
Other nuisances	5	5	—	—
Sanitary accommodation — insufficient	3	3	—	—
Sanitary accommodation — unsuitable or defective	12	12	—	—
Sanitary accommodation — not separate for sexes	—	—	—	—
Offences under the Factory and Workshop Acts:—				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Other offences ... ... (Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order 1921).	—	—	—	—
Total	128	128	—	—

*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

There was no outwork found to be carried on in unwholesome premises during the year.

Smoke Abatement.

On the 1st of October, 1930, Mr. Charles J. Dawson was appointed Smoke Inspector. The smoke inspector is required to give to the abatement of the smoke nuisance as much of his time as can usefully be so employed.

Mr. Dawson has supplied me with the following survey of Bolton's chimneys, other than those of dwelling-houses.

Report on Chimneys at present in use in the Borough.

I beg to report that at present there are 246 chimneys in use within the Borough. These chimneys are utilised as follows :—

1	Boiler	works into each of	103	chimneys.
2	Boilers	work into each of	31	,,
3	,,	,,	38	,,
4	,,	,,	22	,,
5	,,	,,	17	,,
6	,,	,,	2	,,
8	,,	,,	5	,,
9	,,	,,	1	,,

The remaining 27 chimneys are used for the following trade purposes :—

Brick burning	5	chimneys.
Hardening stones	3	,,
Hooping furnace	1	,,
Smelting furnaces	4	,,
Soda ash plant	1	,,
Chemical apparatus	2	,,
Brewers' copper	1	,,
Puddling and re-heating ...	1	,,
Coke ovens	3	,,
Dressing chimneys	2	,,
Carbonisation plant	2	,,
Smith's hearth	1	,,
Varnish condensation plant	1	,,

There are the following methods of stoking adopted :—

359 Boilers are hand-fired.
154 Boilers are mechanically fired.

513

The standard by which we are guided in determining whether a nuisance has been committed by reason of the emission of black smoke is as follows in Bolton:

The emission of black smoke for periods which in the aggregate exceed two minutes in any half-hour is a nuisance, but bursts of black smoke for periods of less than thirty seconds must not be counted.

The work done for the enforcement of this standard in 1930 was as follows:—

687 half-hour observations were taken. Of these observations—

243 showed no emission of black smoke.
135 showed ½ minute of black smoke.
206 showed 1 minute of black smoke.
66 showed 1½ minutes of black smoke.
12 showed 2 minutes of black smoke.
25 showed more than 2 minutes of black smoke.

22 notices of abatement were served, and one firm was prosecuted, when a fine of 20/- and 5/- costs was imposed.

I am confident that no material improvement as regards the smoke nuisance will be obtained until coal is replaced by a smokeless fuel.

PREMISES CONTROLLED BY BYE-LAWS OR REGULATIONS.

Common-Lodging-Houses.

The number of registered common-lodging-houses in Bolton is 35. In 1926 there were 38.

The ward distribution of these common-lodging-houses and the accommodation they afford is as follows:

Ward.	Houses.	Rooms.	Beds.
Exchange	9 ...	54 ...	184
East	21 ...	134 ...	694
Church	2 ...	17 ...	186
Derby	2 ...	16 ...	74
West	1 ...	17 ...	84

ACCOMMODATION FOR THE SEXES.

Description.	Houses.	Males.	Females.	Couples.
Males only	24	971	...	...
Females only	1	...	56	...
Males and Females	1	27	8	...
Females and Couples ...	3	...	23	19
Males and Couples	3	45	...	7
Males, Females and Couples	3	34	18	14
	35	1,077	105	40

The demand for common-lodging-house accommodation has greatly diminished in the past few years and is still steadily falling.

All the common-lodging-houses in Bolton are visited by the Sanitary Inspectors once a month, between the hours of 11 p.m. and midnight, for the purpose of seeing that all is in order.

The inspectors report that of the accommodation available in the common-lodging-houses the average amount occupied is about 50% at the present time.

Prices for beds vary to the following extent :

Single beds from 6d. to 1/2d, the latter price being for cubicles.
Double beds 1/2d. and 1/4d.

Houses-Let-in-Lodgings.

Bye-laws for the regulation of these premises have been approved by the Ministry of Health.

They have not yet been adopted by the Bolton Corporation.

It is extremely desirable that we should have the powers conferred by these bye-laws, as the old bye-laws do not apply to any of the houses-let-in-lodgings in Bolton at the present time.

Vans.

The number of living vans in Bolton at the close of 1930 was 32, as compared with 33 in 1929, a small but welcome diminution.

Particulars of the location and occupation of the vans are set forth below :—

Situation.	No. of Vans.	Occupants.	
		Adults	Children
Fern Street	4	5	3
31, Bridgman Street	2	3	—
Cheetham Court	1	1	2
Corner of Bridge St. and St. George's St. ...	7	12	2
Land adjoining Tonge Moor House ...	5	6	4
Tonge Head Farm, near Tonge Moor Road	1	1	—
Radcliffe Road (200 yards from Long Lane)	2	4	3
Rear of 405, Radcliffe Road	1	1	—
Croft Side	1	2	3
Field adjoining Withins Lane	1	1	—
Adjoining Capitol Bleachworks	1	2	—
Barrow Bridge	1	1	—
Back Darley Street	2	2	—
Cotton Street	2	4	1
Shurmer Street	1	2	—
	32	47	18

Offensive Trades.

Offensive trades are being carried on in 24 different premises in Bolton. The nature of these trades and their distribution in the wards of the town is shown in this table :

OFFENSIVE TRADES.

Trade.	Added Area.	West.	Halliwell.	Bradford.	Derby.	East.	Church.	North.	Rumworth.	Exchange.	TOTAL.
Tripe Boilers	1	...	...	2	...	...	1	...	...	...	4
Fellmongers and Tanners ...	...	1	...	1	...	...	...	...	...	...	2
Hide and Skin Depots	...	...	...	...	...	1	...	...	...	1	2
Gut Scraping	...	...	...	1	...	...	...	...	...	...	1
Blood Boiler	...	...	...	...	...	...	1	...	...	...	1
Soap Works...	1	...	...	...	...	...	...	...	...	...	1
Chemical Works	...	...	...	...	...	1	1	...	...	...	2
Muriatic Acid Works	1	...	...	...	...	...	...	...	...	...	1
Tar and Ammoniated Sulphate Works	1	...	...	...	...	...	...	...	...	...	1
Brick Works	6	...	1	...	...	...	...	...	1	...	8
Knackers' Yard	...	...	...	...	...	...	1	...	...	...	1
Total Offensive Trades	10	1	1	4	...	2	4	...	1	1	24

No serious nuisance has arisen in connexion with any of the above trades.

Slaughterhouses.

Bolton's accommodation for slaughtering is as follows:—

There is a public abattoir, owned by the Bolton Corporation, and administered by the Markets Committee.

The facilities afforded by these public abattoirs are not sufficient to meet even half the needs of the Bolton butchers.

Until adequate public abattoirs are provided the private slaughterhouses must be allowed to continue in operation.

It is very desirable that all slaughtering should be centralised in one establishment.

The existing public abattoir has accommodation for the slaughtering of all classes of animals.

There are in Bolton 12 registered and 5 licensed private slaughterhouses. They have all been in regular use throughout 1930, and in none of them has there been any change of occupancy.

The 17 private slaughterhouses are used as follows:—

For Cattle, Sheep and Pigs ... 8 Slaughterhouses
For Cattle and Pigs ... ... 1 Slaughterhouse
For Cattle only ... ... 1 Slaughterhouse
For Pigs only ... ... 7 Slaughterhouses

During 1930, 2,335 visits were paid by the Veterinary Surgeon and the Meat Inspector to the abattoirs and private slaughterhouses.

SECTION IV.

Housing.

HOUSING.

The number of new houses completed in 1930 was 696 as compared with 779 in 1929.

The number of new houses completed in Bolton in each year since 1921 is as follows :

Year.	Private Enterprise.	Municipal Schemes.	Total.
1921	34	191	225
1922	18	462	480
1923	111	30	141
1924	351	3	354
1925	502	179	681
1926	610	251	861
1927	571	510	1,081
1928	319	160	479
1929	551	228	779
1930	204	492	696

Of the 492 houses provided under municipal schemes 70 were built without State assistance and 422 with State assistance. The number of unsubsidized houses provided in 1930 was therefore 274.

The following table shows the number of houses and the number of inhabitants per house in Bolton since 1901.

In the report for 1929 the number of houses in 1929 was given as 47,287. This was an error. The correct figure is given below.

		Houses.	Inhabitants per House.
Census	1901	36,177	4·64
„	1911	41,585	4·34
„	1921	42,475	4·28
Estimated	1925	44,193	4·08
„	1926	45,054	3·92
„	1927	46,088	3·86
„	1928	46,547	3·88
„	1929	46,678	3·88
„	1930	47,295	3·83

The following table gives particulars as to numbers and situation in Wards of houses which were completed and certified during 1930, of all houses which were in course of construction during 1930, but which were unfinished at its close, and of all houses for which plans had been passed during 1930, but whose construction had not been begun when this year ended.

New houses certified, 1930.

Ward.	Number.
Old Borough	110
Tonge	117
Astley Bridge	80
Great Lever	27
Smithills	29
Hulton	33
Darcy Lever-cum-Breightmet ...	65
Deane-cum-Lostock	211
Heaton	24
Total	696

Houses in course of construction on 31st December, 1930.

	Number.
By the Local Authority	246
By other bodies or persons	152
Total	398

Houses for which plans had been approved but construction had not been commenced on 31st December, 1930.

	Number.
By the Local Authority	277
By other bodies or persons	86
Total	363

The 1923 Housing Act (under which private enterprise was building) ceased to operate on 30th September, 1929.

1.—Inspection of Dwelling-houses during the year.

(1) Total number of dwelling-houses inspected for housing defects.

(*a*) Under Public Health or Housing Acts 4,952

(*b*) Number of inspections made 19,844

(2) Number of dwelling-houses (included under sub-head (1) above)

(*a*) Which were inspected and recorded under the Housing Consolidated Regulations, 1925 2,059

(*b*) Number of inspections made 6,627

(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation 1

(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation 1,955

2.—Remedy of Defects without Service of formal Notices.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers 1,536

3.—Action under Statutory Powers during the year.

A. *Proceedings under Section 3 of the Housing Act, 1925. and Section 17 of the Housing Act, 1930.*

	Sec. 3, H.A. 1925.	Sec. 17 H.A. 1930.
(1) Number of dwelling-houses in respect of which notices were served requiring repairs ...	238 ...	177
(2) Number of dwelling-houses which were rendered fit after service of formal notices		
(*a*) by owners	180 ...	172
(*b*) by Local Authority in default of owners	58 ...	2
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	— ...	—

B. *Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied 4

(2) Number of dwelling-houses in which defects were remedied after service of formal notices

(*a*) by owners 4

(*b*) by Local Authority in default of owners —

C. *Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925.*

(1) Number of representations made with a view to the making of Closing Orders 1

(2) Number of dwelling-houses in respect of which Closing Orders were made 1

(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit ... ... —

(4) Number of dwelling-houses in respect of which Demolition Orders were made ... ... —

(5) Number of dwelling-houses demolished in pursuance of Demolition Orders 6

D. *Proceedings under Section 19 of the Housing Act, 1930.*

(1) Number of dwelling-houses in respect of which Demolition Orders were made ... ... —

(2) Number of dwelling-houses demolished in pursuance of Demolition Orders ... ... —

E. *Proceedings under Section 20 of the Housing Act, 1930.*

Number of dwelling-houses in respect of which Closing Orders were made on part of the building ... ... —

4.—Number of Houses owned by the Local Authority.

(1) Under Part III of the Housing Act, 1925 1,615

(Of these 1,615, 552 have been built during the last two years.)

(2) Under Part II of the Housing Act, 1925 ... ... —

(3) Under other powers (1919 Act) 711

Slum Clearance.

As required by the Housing Act of 1930, a scheme showing the work to be done in Bolton during the five years period, beginning with 1931, in connexion with slum clearance and the rehousing of the inhabitants of houses demolished was approved by the Council in December, 1930, and communicated to the Ministry of Health. A brief summary of this scheme is as follows :

It was estimated that the scheme would involve the demolition of 456 houses during the five year period.

It was estimated that the demolitions, together with the abatement of overcrowding in the areas dealt with would mean the displacement of 1,678 persons for whom 532 houses would be required.

Getting rid of slum dwellings is solely and entirely a matter of rehousing. When suitable accommodation is provided for the inhabitants of insanitary dwellings at rents that they can pay, the slums will empty themselves.

I repeat once more that the rehousing question cannot possibly be solved without the provision of a considerable number of two-room dwellings, to let at about five shillings per week.

At the present time (August 5th, 1931) the procedure necessary for the demolition under the Housing Act of 1930 is practically complete in the case of 69 houses, containing a population of 174 persons aged ten years and upwards, and 58 persons under the age of ten years. These people are waiting to be rehoused, and as soon as this problem has been successfully dealt with it will be possible to proceed with demolitions at any speed that the process of rehousing will permit.

The insanitary areas scheduled in the five years' scheme under the Housing Act of 1930, are given below. I call them insanitary areas in order to leave open the decision as to whether they shall be dealt with as clearance or as improvement areas.

Statement of Insanitary Areas.

Area No.

1. Clegg's Buildings—Bounded by Back Chorley Street, Clegg's Buildings and Back St. George's Road.

2.—Dawson Lane—Bounded by Dawson Lane, Back St. George's Road and the brook behind.

3.—Chorley Grove and Chorley Street.

4.—Back Bark Street—Behind 78 to 82, Bark Street and bounded by Knowsley Street and Back Bark Street.

5.—Back Bark Street East—Behind 42 and 44 Bark Street.

6.—Back Acres and Acres Court—Bounded by Back Acres and Hotel Street.

7.—Edge's Court—Bounded by Central Street and Edge's Court.

8.—Nicholson Court—Between 35 and 37 Lupton Street and the Woodman's Cottage, Deane Road.

9.—Stanley Court—Bounded by Stanley Street, South, Back Mason Street and Commission Street.

10.—Back Deane Road, N.—Behind 90 to 94 Deane Road.

11.—Back Commission Street—Behind 50 to 58 Deane Road, bounded by Wareing Street and Back Commission Street.

12.—Columbia Court, Crook Street and Derby Street—Bounded by Derby Street and Crook Street and Derby Street Central School.

13.—Vicker's Square and Derby Street—Corner of Liptrott Street and Derby Street.

14.—Back Cannon Street—Bounded by Birkdale Street, Peace Street, Back Cannon Street and Can Row.

15.—Shuttle Street and John Street—Bounded by John Street, Ebenezer Street, Frederick Street and Regent Cinema.

16.—James Street, Back James Street and Ebenezer Street—The block formed between Back James Street and James Street at their junction with Ebenezer Street.

17.—Dickson Street and Back Dickson Street—Bounded by Dickson Street, Cannon Street and Back Scowcroft Street.

18.—Minerva Street, Kestor Street and Bury Old Road—Bounded by Minerva Street, Kestor Street and 95 Bury Old Road.

19.—Radcliffe Road and Endor Street—Bounded by Radcliffe Road, Endor Street and Bury Road Picture House.

20.—All Saints' Street, Reynolds Court, Bow Street and Back Bow Street —Bounded by All Saints' Street. Bow Street, Back Bow Street and Kay Street.

21.—Lark Street—Bounded by Lark Street, Back Lark Street and Union Street.

22.—Independent Street, Ward's Court and Green Street—Bounded by Independent Street, 32, Independent Street, Friends' Burial Ground and works of Messrs. Geo. Nelson & Son.

23.—Green Street and Water Street—Includes Nos. 28 and 30, Water Street, and 1 and 3, Green Street.

24.—Hulme's Court and Bridgman Place—Bounded by Bridgman Place, Carlton Street and the works of R. Threlfall.

25.—Kay Street, Charles Street and Bradshaw Court—Bounded by Kay Street, Cross Street, Bradshaw Court and Charles Street.

26.—Hulme Street, Cross Street and Back Cross Street—Bounded by Hulme Street, Back Cross Street, Cross Street and 36 Cross Street.

27.—Falcon Court—Bounded by Kay Street, Cross Street, Turton Street and Union Street.

28.—All Saints' Street, Bow Street and Back Bark Street—Bounded by All Saints' Street, Bow Street Back All Saints' Street and Bark Street.

29.—Lomax Court—Bounded by 20, Green Street, Lomax Court, 24a, Green Street and Green Street.

30.—Barlow Row—Bounded by Folds Road, Leigh Street, Kestrel Street and Mechanic Street.

31.—Chapel Street and Mechanic Street—Bounded by Chapel Street, Union Street, Mechanic Street and Hulme Street.

32.—Pleasant View—Bounded by Radcliffe Road, Pleasant View and Snow Hill Housing Estate.

33.—Kestor Street—Bounded by Kestor Street, Mill Hill Terrace, river bank on south side and approach to the works of Messrs. Blair & Sumner, Ltd., Mill Hill Bleachworks.

34.—Cable Street—Bounded by Flag Street, Turton Street, Cable Street and Cable Street Wesleyan Chapel.

35.—Smith Street and Garden Street—Bounded by Smith Street, Garden Street, 21, Latimer Street and vacant land at rear.

36.—Maze Street and Radcliffe Road—Bounded by Radcliffe Road, Maze Street and Frodsham Street.

37.—8 to 16, Back Moncrieffe Street, 125—133, Moncrieffe Street—Bounded by Moncrieffe Street, Ashworth Street and railway wall.

38.—Lever Bridge—Between Bolton to Bury Railway, Lower Darcy Street and Hag End Brow and Chapel Place.

39.—Ormrod Street, Back Ormrod Street and Royal Row—Bounded by Great Moor Street, Crook Street and vacant land.

40.—Barrow's Court—Bounded by Newport Street, Back Newport Street, Great Moor Street and railway wall.

41.—Rothwell Street—Bounded by Rothwell Street, Back Derby Street, Back Rothwell Street and Rothwell Street Wash-houses.

42.—Milk Street—63 to 67, Rothwell Street, 52 to 60, Milk Street, and 43 to 59, Milk Street.

43.—Bird Street—Between Back Derby Street and Houghton Street and backing on to Fletcher Street Wesleyan Chapel and Sunday School.

44.—Back Lane—Nos, 203 and 205 abut on Back Lane. No. 56 immediately adjoins the rear of No. 203. The area is bounded by Back Lane and St. George's Road.

45.—Clarence Court—Bounded by Clarence Street, Duke Street and Back Lane.

46.—School Hill and Pleasant Street—These houses abut on to School Hill and Pleasant Street and are numbered 61 to 71, School Hill and 73 and 75, Pleasant Street.

47.—Moss Street—The area consists of two portions. One bounded by Moss Street, Stirrup Street, Blackburn Road and Victoria Street, and the other bounded by Victoria Street, Blackburn Road and Back James Terrace.

48.—Houghton Street.

49.—Brunel Street—Bounded by Raglan Street, Back Rossini Street, the works of Messrs. W. Mather and Co., Ltd., and open land.

50.—Nell Street—Bounded by Blackburn Road, Birley Street, Holland Street and Nell Street.

51.—Greenwood Vale –Bounded by Blackburn Road, Back Greenwood Vale and Ash Terrace.

52.—Viola Street—Bounded by Viola Street, Blackburn Road and Back Kelly Row.

53.—Blackburn Road, Progress Street and Riley's Court—Bounded by Progress Street, Blackburn Road, Halliwell Road and Riley's Court.

54.—Raglan Street, Openshaw Court and Halliwell Court—Bounded by Halliwell Road, Raglan Street, works of Messrs. Greenhalgh & Shaw, Ltd., and Gable of 362, Halliwell Road.

55.—Eden Street and Lloyd Street—Bounded by Eden Street, Lloyd Street, Old Road, and Derbyshire Row.

56.—Boot Lane—These houses are unoccupied and will shortly be demolished.

57.—Bridgman Street—Bounded by Bridgman Street, Burns Street, Bleakley Court and Thynne Street.

58.—Manor Street and Water Street—Bounded by Brown Street, Water Street, Folds Road and Manor Street.

59.—Closes Street—52 to 62, Crook Street and 12 to 22, Closes Street.

60.—Through Court and Trinity Court—Behind 162 Crook Street.

SECTION V.

Inspection and Supervision of Food, etc.

The Milk and Dairies Order, 1926.

Cowkeepers, Dairymen and Purveyors of Milk.

Cowkeepers on register (1929)	126
,, discontinued (1930)	1
Total ...	125
Cowsheds on register (1929)	360
,, discontinued (1930)	5
Total ...	355

The following statement shows the number of cowkeepers, cowsheds, number of cows provided for, and the average number of cows in sheds in the respective districts on 31st December, 1930 :—

Number of District	Cowkeepers	Cowsheds	Number of Cows provided for	Average number of Cows in sheds
1	14	41	364	292
2	32	89	918	645
3	18	44	445	312
4	19	59	469	338
5	18	48	426	290
6	23	72	661	626
7	1	2	18	17
Totals	125	355	3,301	2,520

Number of dairies and premises of milk purveyors on register (31st December, 1930) 421

In carrying out the provisions of the Milk and Dairies Order, 1926, routine inspection of dairy farms has been maintained throughout the year. Visits have been paid to 244 farms, when 709 cowsheds have been inspected, and a careful clinical examination made of 5,355 cows.

As in previous years it has been my general practice during veterinary inspections on farms to be accompanied by a Sanitary Inspector of the department on whose district the farms are situated, when special attention is paid to the general hygiene and cleanliness of the premises, cows, dairy utensils, and the whole of the equipment connected with the milk supply.

Many improvements and structural alterations have been carried out in existing cowsheds. The interior of one cowshed has been reconstructed and equipped with modern fittings.

During the year nine samples of milk were taken from individual cows with suspected tuberculosis of the udder and submitted to the biological test; four of these were found to contain tubercle bacilli, and five were reported to be negative. The cows from which these positive milk supplies were obtained were slaughtered and dealt with under the provisions of the Tuberculosis Order.

Fourteen mixed samples of milk involving groups of cows were taken. Two of these samples obtained from farmers residing in outside districts but retailing milk within the Borough were found to contain tubercle bacilli. Under the provisions of the Milk and Dairies (Consolidation) Act, 1915, the responsibility of taking action where infected milk is involved has been placed upon the Authority of the district in which the milk is produced; consequently the Authority concerned was notified and arrangements made for your Veterinary Inspector to be present at the inspection of the suspected herds.

Prosecution under the Milk and Dairies (Amendment) Act of 1922.

For selling milk with the description or designation resembling that for "Grade A" milk in contravention of Section 3 of the Milk and Dairies (Amendment) Act of 1922, a farmer was fined £1.

Milk (Special Designations) Order, 1923.

The following licences were granted during the year 1930 under this Order.

Producers Licence to use the designation "Certified" ... (Licence issued by Ministry of Health.)	1
Dealers Licence to use the designation "Certified" ...	2
Producers Licence to use the designation "Grade A" ...	4
Dealers Licence to use the designation "Grade A" ...	1
Dealers Licence to use the designation "Pasteurized" ... (Licence is in respect of a Pasteurizing establishment.)	1
Supplementary Licence to use the designation "Pasteurized"	1

"Certified" Milk.

A Licence to produce "Certified" Milk has been granted by the Ministry of Health to one dairy farmer in the Borough.

As in previous years the farm has been frequently visited, and every animal of the herd has been clinically examined and submitted to the prescribed intra-dermal tuberculin test twice during the year by this department, in accordance with the provisions of the Order for producers of "Certified" milk.

"Grade A" Milk.

Licences to produce "Grade A" Milk have been granted by this department to four dairy farmers in the Borough.

These farms have been visited monthly and a clinical examination made of all cows in the herds. In addition to examining the cows in the herds, all recently purchased cows were submitted to a careful veterinary examination before being admitted to the herds. The provisions of the Order in regard to cleanliness of the cows, cowsheds, and dairies have been carried out satisfactorily throughout the year.

GENERAL FOOD INSPECTION.

The general inspection of the food supplies of Bolton has been systematically carried out during 1930 by our Veterinary Surgeon, Mr. R. P. Holmes, F.R.C.V.S., and the Assistant Meat Inspector, Mr. H. Whitaker.

General Inspections.

Cattle	9,269	Farms	302
Calves	195	Slaughterhouses	2,335
Sheep	36,192	Knacker's Yard	26
Pigs	5,897	Tripe Works	48
Store Cattle ...	169	Gut Cleaners	28
Railway Sidings ...	159	Food Preparation Premises	578
Fairs	52	Meat Carriers' Vehicles ...	612
Public Markets ...	497		

Shops, Stalls and Stores.

Beef Butchers ...	2,044	Provision Dealers ...	1,828
Pork Butchers ...	923	Fruiterers	1,742
Wholesale Meat Stores	277	Fishmongers	901
Cold Stores	36	Street Hawkers	893
Ice Boxes	574	Cellars	394

Carcases Found to be Affected with Disease.

Disease or Defect.	Examined				Action taken		Examined	Action taken		Examined	Action taken		Examined	Action taken.	
	Cows	Bulls	Heifers	Bullocks	Whole carcase destroyed	Parts and Organs destroyed	Calves	Whole carcase destroyed	Parts and Organs destroyed	Sheep	Whole carcase destroyed	Parts and Organs destroyed	Pigs	Whole carcase destroyed	Parts and Organs destroyed
Tuberculosis	980	35	24	84	163	960	15	9	6	...	...	...	299	15	284
Pleurisy	7	...	5	5	...	17	...	...	...	...	...	...	13	...	13
Pneumonia	2	...	...	1	...	3	2	2	...	2	1	1	15	6	9
Nephritis	6	...	...	...	...	6	...	...	...	...	...	...	...	...	...
Septicæmia	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Mastitis	13	...	...	...	...	13	...	...	...	...	...	...	...	...	...
Septic Metritis	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Abscess	23	...	1	11	...	35	...	...	...	1	...	1	2	...	2
Bacterial Necrosis ...	12	...	1	13	...	26	...	...	...	...	...	...	...	...	...
Actinomycosis	4	...	...	1	...	5	...	...	...	...	...	...	...	...	...
Echinococcus	164	3	1	13	...	181	...	...	...	15	...	15	15	...	15
Distomatosis	145	2	3	160	...	310	...	...	...	85	...	85	...	...	...
Decomposition	1	...	...	...	1	...	...	...	...	22	22	...	8	8	...
Angioma	61	...	...	...	...	61	...	...	...	...	...	...	...	...	...
Emaciation	...	..	...	...	...	...	...	...	...	4	4	...	2	2	...
[illegible]e s Disease	8	...	...	2	8	2	...	...	...	...	...	...	...	...	...
Traumatism	11	...	1	1	1	12	...	...	...	1	1	...	1	...	1
Œdema	1	...	...	1	2	...	3	3	...	12	12	...	...	...	...
Fevered	11	...	1	...	12	...	...	...	...	...	...	...	...	...	...
Cirrhosis	6	...	...	...	...	6	...	...	...	...	...	...	12	...	12
Neoplasms	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...
Immaturity	...	...	...	...	...	...	9	9	...	...	...	...	...	...	...
Jaundice	...	...	...	...	...	...	1	1	...	1	1	...	1	1	...
Arthritis	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...
Gangrenous Arthritis ...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Emaciation	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Cysticercus Tenuicollis ..	...	...	...	...	...	...	...	...	...	2	...	2	26	...	26
Swine Fever	...	...	...	...	...	...	...	...	...	...	...	...	11	11	...
Total	1456	40	37	294	188	1,639	30	24	6	146	41	105	409	45	364

The following table shows the total number of animals slaughtered in the Borough during the year; the number and percentage of animals affected with disease; the number and percentage of animals affected with tuberculosis; and the number and percentage of animals affected with tuberculosis of the udder. The cows affected with tuberculosis of the udder were received from districts outside the Borough.

	Total Number of Animals Slaughtered	Animals affected with Disease		Animals affected with Tuberculosis		Cows affected with Tuberculosis of the Udder	
		Number	Per-centage	Number	Per-centage	Number	Per-centage
CATTLE	9,269	1,827	19·7	1,123	12·1	30	0·32
CALVES	800	30	3·75	15	1·9	—	—
SHEEP	36,192	146	0·4	—	—	—	—
PIGS	5,897	409	6·9	299	5·0	—	—

Number of Organs Destroyed for Tuberculosis and Other Conditions in the Different Classes of Animals during 1930.

	Cattle.	Calves.	Sheep.	Pigs.	Total.
LUNGS:					
Tuberculosis	1,020	13	...	138	1,171
Other conditions ...	220	15	42	70	347
HEARTS:					
Tuberculosis	452	10	...	120	582
Other conditions ...	30	15	37	44	126
BOWELS:					
Tuberculosis	535	9	...	105	649
Other conditions ...	32	15	40	38	125
STOMACHS:					
Tuberculosis	460	9	...	93	562
Other conditions ...	34	14	40	38	126
SPLEENS:					
Tuberculosis	452	9	...	91	552
Other conditions ...	34	15	40	36	125
LIVERS:					
Tuberculosis	668	12	...	125	805
Other conditions ...	572	15	174	91	852
KIDNEYS:					
Tuberculosis	37	...	...	...	37
Other conditions ...	28	2	...	4	34
HEADS:					
Tuberculosis	560	13	...	259	832
Other conditions ...	32	12	40	2	86
TOTALS	5,166	178	413	1,254	7,011

Weight of Unsound Meat Destroyed.

	Number	tons.	cwts.	qrs.	lbs.
Beef Carcases ...	188	39	2	0	3
,, Fore Quarters ...	36	2	1	3	2
,, Hind Quarters ...	13	...	16	0	10
,, Briskets ...	290	1	18	3	10
,, Offals ...	...	34	11	0	13
Mutton Carcases ...	41	...	13	0	26
,, Offals ...	...	...	5	2	24
Pork Carcases ...	45	2	0	1	8
,, Offals ...	...	2	6	3	7
Veal Carcases ...	24	...	10	0	8
,, Offals ...	...	...	2	3	1
Total Weight ...	637	84	8	3	0

In addition to the above, the following unsound imported meat and offals were destroyed, chiefly owing to decomposition :

	cwts.	qrs.	lbs.
Beef	1	3	13
,, Kidneys	3	3	20
Sheep Livers	...	...	12
Mutton	...	1	12
Total Weight	6	1	1

Unsound Fish Destroyed.

	tons.	cwts.	qrs.	lbs.
Cod	...	11	0	10
Crabs	...	1	2	14
Fillets	...	...	2	7
Hake	...	6	0	25
Halibut	...	2	1	26
Kippers	...	...	3	14
Mackerel	...	11	1	0
Mussels	1	2	0	0
Salmon	...	2	0	26
Sprag	...	2	2	0
Total weight ...	3	0	3	10

Unsound Poultry and Rabbits Destroyed.

	Number	cwts.	qrs.	lbs.
Chickens	273	6	2	1
Turkeys	5	...	1	22
Rabbits	456	8	0	16
Total	734	15	0	11

Canned Foods and Provisions Destroyed as Unsound.

	Number of Tins, etc.	cwts.	qrs.	lbs.
Bacon	...	...	1	4
Corned Beef	4	...	...	24
Ox Tongue	2	...	...	8
Pigs Maws	...	1	2	0
Short Bread	...	...	...	22
Sheep Trotters ...	...	3	0	0
Total Weight ...		5	1	2

Unsound Fruit and Vegetables Destroyed.

	tons.	cwts.	qrs.	lbs.
Apples	...	19	2	23
Gooseberries	...	...	1	4
Grapes	...	...	2	4
Grape Fruit	...	...	2	8
Oranges	...	1	1	10
Pears	...	16	1	24
Plums	...	5	2	0
Pineapples	...	...	1	12
Raspberries	...	...	1	8
Tomatoes	1	4	2	14
Peas	...	...	1	20
Potatoes	...	4	0	0
Sprouts	...	...	3	0
Watercress	...	6	1	0
Total Weight ...	4	1	0	15

Unsound Food.

Proceedings were taken and a conviction obtained in the following case:—

1. Being in posession of unsound meat intended for the food of man.
A butcher was fined £41.

Sale of Food Order, 1921.

During routine inspection of all shops, constant attention has been directed to the observance of the provisions of this Order. The Order provides that a person shall not expose for sale by retail any imported meat unless the article bears at the time of exposure for sale a label with the word "imported," or with a word or words disclosing the country of origin of the article clearly printed thereon so as to be easily readable by the customer. This Order does not apply to bacon or ham, or cooked, canned, or potted meat, sausages, or offals.

The general requirements of the Order have been well observed; only in ten instances was it found necessary to caution traders for minor offences against the Order.

Public Health (Meat) Regulations, 1924.

There are 257 shops and stalls occupied by butchers in the Borough. These are frequently visited, and an inspection is made of the meat and premises. In seven cases it was found necessary to caution persons for negligence in complying with the requirements of the Regulations. As in previous years, the most frequent visits have been made to those premises on which evidence of negligence had been found. Special attention has been directed to the inspection of markets, stalls, food preparation premises, and meat carriers' vehicles in regard to the transport, handling, and storage of foods.

Proceedings were taken and a conviction obtained against an employee at a wholesale meat stores for failing to wear a clean and washable head covering whilst occupied in carrying meat from premises in which meat is sold by wholesale. A fine of 15/- was imposed.

Notices received under the Public Health (Meat) Regulations, 1924.

Written notifications of regular slaughtering at fixed times on fixed days	14
Notifications of slaughtering at other than fixed times on fixed days	395

Notification of disease or suspected disease or unsoundness.

Relating to cattle	397
„ sheep	5
„ pigs	88
„ calves	7
Total	497

Merchandise Marks Act, 1926.

This Act provides for Orders in Council to be made for the compulsory marking of certain goods denoting the country of origin. Imported goods from foreign countries are required to be marked with the word "Foreign," or the name of the particular country must be indicated; but goods imported from the Dominions or Colonies are required to be marked with the word "Empire," or the name of the exporting country.

Orders in Council have been made on specified dates and dealing with the following goods:—

Date of Operation	Name of Goods
November 13th, 1928 ...	Honey and fresh apples
June 21st, 1929	Currants, sultanas, raisins, eggs in shell, dried eggs, and oat products
March 17th, 1930	Raw tomatoes

During the year a considerable amount of time has been expended in bringing the provisions of these Orders to the notice of the traders and shopkeepers concerned. Leaflets setting out the provisions of these Orders have been distributed by hand and fully explained to all concerned.

Frequent inspections have been made of shops, stalls, and markets, and action has only been taken in cases of gross negligence of the Orders. Three fruiterers were proceeded against for failing to label imported tomatoes as such, and fines of 5/- were imposed in each case.

Diseases of Animals Acts, 1894 to 1927.

It is the duty of this department of the Local Authority to enforce the provisions of the Diseases of Animals Acts, and Orders of the Ministry of Agriculture and Fisheries in all outbreaks of Scheduled Contagious Diseases of Animals.

The following is a brief account of the principal Orders under which work has been carried out during the year.

Tuberculosis Order of 1925

The Order provides for the compulsory slaughter by Local Authorities of cows suffering from tuberculosis of the udder or giving tuberculous milk, and of bovine animals suffering from tuberculous emaciation, or from a chronic cough, and showing definite clinical signs of tuberculosis.

Tuberculous bovine animals which are most dangerous in the spread of the disease may be divided into two distinct categories, (*a*) cows giving tuberculous milk, which are a danger to human health as well as to other animals, and (*b*) bovine animals freely excreting tubercle bacilli, which are the main source of the spread of tuberculosis to other animals. Both of these categories are dealt with in the Order, the intention being to proceed as far as practicable towards the elimination of those two classes of affected animals and thus remove the source of immediate danger to human health, and also reduce the amount of infection likely to spread the disease to other animals.

The following table shows the number of animals examined under the Order, the number of animals slaughtered, and the form in which they were diseased:—

Total Number of Animals Examined	Number of Animals Slaughtered	Number with Tuberculosis of Udder	Number giving Tuberculous Milk	Number with Tuberculous Emaciation	Number with chronic cough and definite signs of Tuberculosis
475	17	3	1	5	8

For failing to notify that he had in his possession a cow suffering from tuberculosis of the udder, and also for failing to isolate the animal, a farmer was convicted and fined £1 5s.

The Anthrax Order of 1928.

No cases of this disease have occurred in the Borough during the year. Although not suspected of Anthrax, the deaths of three cattle were reported to this department as having occurred without history of previous illness. In each case the premises were visited and blood smears obtained, which on careful microscopical examination were found to be negative.

Foot and Mouth Disease.

No outbreaks of this disease have occurred in the Borough during the year. Owing to outbreaks occurring in adjoining counties and parts of Lancashire being included in the Scheduled Area it was considered advisable to warn farmers, butchers, and dealers of their responsibilities, and necessary precautions to be taken in the event of an outbreak, and for this purpose Foot and Mouth Disease placards were posted up on the hoardings in conspicuous parts of the town, and a circular letter of advice was posted to all farmers, butchers, and dealers in the Borough.

Foot and Mouth Disease (Boiling of Animal Foodstuffs) Order of 1928,

The provisions of this Order require that any meat, bones, offal, or other part of the carcase of an animal, or any swill, or any other broken

or waste foodstuffs which have been in contact with meat, bones, offal, or other part of the carcase of an animal, shall be boiled for at least one hour before being brought into contact with, or fed to, animals.

During the year frequent visits of inspection have been made to farms and piggeries where animal foodstuffs are being fed to animals. On each of the premises visited the occupiers were found to be complying with the provisions of the Order.

Foot and Mouth Disease (Packing Materials) Order of 1925 and 1926.

The provisions of this Order prohibit hay and straw which has been used for packing purposes, from being brought into contact with cattle, sheep, goats, other ruminating animals, and swine, and if not returned for further use as packing material it must be destroyed.

The Order also provides that no material which has been used for the wrapping of meat, meat products, or offals, shall be brought into contact with any of the above-named animals unless it has been sterilized by boiling.

During the year frequent visits have been paid to premises where packing materials are being used or received, including sack merchants, wholesale meat stores, provision dealers, drysalteries, tea merchants, breweries, and general wholesale and retail store dealers.

Enquiries were made on each of the premises visited, and in each case it was found that the provisions of the Order were being carried out.

Protection of Animals Act, 1911.

The regulations contained in the first schedule of the above Act relate to Knackers' Yards. During the year 26 visits were paid to the Knacker's Yard to ensure that the provisions of the Act were being carried out.

Poultry Act, 1911.

The Conveyance of Live Poultry Order, 1919, made under the above Act provides for (*a*) The protection of live poultry from unnecessary suffering when travelling or exposed for sale; and (*b*) Cleansing and disinfection of receptacles or vehicles used for the conveyance of live poultry.

The markets in which live poultry are exposed for sale have been frequently visited, and attention directed to the proper compliance of the above Order.

Parasitic Mange.

No outbreaks of this disease have occurred in the Borough during the year.

Swine Fever.

On the 17th and 18th March, 1930, Swine Fever was reported as suspected on three premises in the Borough. These premises were visited, and on investigation Swine Fever lesions were discovered. Restrictions were then imposed on the premises, and all precautionary measures taken to prevent the spread of disease.

The Ministry of Agriculture and Fisheries was notified, and on the 21st March the existence of Swine Fever on the three premises was confirmed by the Ministry.

The infected pigs had recently been purchased at Preston Auction Mart, and at private premises in Radcliffe.

The following table shows the number of pigs found on the three infected premises at the time of the outbreak, and how the pigs were dealt with during the period that the premises remained under restrictions :—

Number of premises	Total number of pigs on premises at outbreak	Number of pigs died or destroyed on premises	Number of pigs slaughtered and dressed on premises	Pigs removed to slaughter-houses on licence	Pigs remaining on premises when restrictions removed	Date when restrictions withdrawn
1	99	24	9	66	Nil	16th April, 1930
2	43	2	35	6	Nil	10th May, 1930
3	28	1	Nil	8	19	6th June, 1930
Totals	170	27	44	80	19	—

The 27 pigs referred to in Column 3 of the above table all died or were destroyed on the premises, and were found on post mortem examination to be affected with Swine Fever.

The 44 pigs referred to in Column 4 were slaughtered and dressed on the premises for food. Out of this number four pigs were found to be affected with Swine Fever.

The 80 pigs referred to in Column 5 which were removed to Slaughterhouses under licences issued by the Ministry of Agriculture were slaughtered and dressed. Out of this number 18 pigs were found to be affected with Swine Fever.

The 19 pigs referred to in Column 6 were remaining on the premises when the restrictions were withdrawn.

Out of the total of 170 pigs on the three infected premises 49 pigs were found to be affected with Swine Fever. The whole of the diseased pigs were removed from the premises and destroyed by burning at the Corporation Refuse Destructor. All premises have been thoroughly cleansed and disinfected in accordance with the provisions of the Swine Fever Order.

Lancashire Swine Fever Infected Area Order of 1930.

Owing to the serious increase in the prevalence of Swine Fever in Lancashire, the Ministry of Agriculture and Fisheries made an Order applying Swine Fever Infected Area restrictions to the whole of the County of Lancashire. This Order came into operation on the 1st of June, 1930, and from this date all movements of swine out of, or within the Borough were controlled by licences granted by this Department.

The above Order was revoked on the 8th October, 1930, when all restrictions on the movements of pigs in the County of Lancashire were withdrawn.

Markets Sales, and Lairs Order of 1925, and Amending Orders of 1926 and 1927, and Transit of Animals Order of 1927.

These Orders require every part of a market-place, fair-ground, sale-yard or other premises used to accommodate animals exposed at such market, fair, or sale to be so paved with cement, concrete, asphalt, or other hard material impervious to water as to permit of the same being effectually cleansed and disinfected. They also provide for the efficient cleansing and disinfection of all markets and lairs in which animals have been exposed for sale as soon as practicable after being used for any such purpose on any day and before being again so used. In regard to transit of animals, the Order provides for the efficient cleansing and disinfection of railway trucks and railway pens in which animals have been kept, and before being used again for such purpose.

The cattle market has been visited each week when sales were held, and the cattle inspected. The cleansing and disinfection of the premises has been supervised after each occasion on which the market has been held.

Frequent visits of inspection have also been made to the railway sidings and loading platforms, and the cleansing and disinfection of these, in addition to the railway trucks and railway pens, have been kept under constant supervision.

Transit of Animals (Amendment) Order of 1930.

This Order provides for the cleansing and disinfection of road vehicles (whether mechanically propelled or horse drawn) used for the

carriage of animals by road generally. The requirement applies to any road vehicle which is used on a highway or thoroughfare by any person:—

(*a*) for hire for the conveyance of animals; or

(*b*) for the conveyance of animals the property of a dealer, or in connection with the trade or business of a dealer; or

(*c*) for the conveyance of animals the property of two or more owners.

The Order also requires the owner or person in charge of a road vehicle to keep a record of all animals carried, and the dates and places at which the vehicle was cleansed and disinfected.

Provision has been made at the cattle market for the cleansing and disinfecting of road vehicles. During the year constant supervision has been kept on the movements of animals to and from the cattle market and other premises within the Borough, when special attention has been directed to secure efficient cleansing and disinfection of all road vehicles after each movement has taken place. Frequent inspections have also been made of the record books required to be kept under the Order.

In order to draw the attention of all persons concerned in the transport of animals, large posters setting out in detail the provisions of the Order have been displayed on the hoardings in conspicuous parts of the town, and at the police stations, cattle market, and abattoirs. Leaflet copies of the Order have been posted to all farmers, butchers, traders, and others engaged in the transport of animals.

Movement of Animals (Records) Order of 1925.

The object of this Order is to facilitate the tracing of all animals which may have been exposed to infection, and for this purpose all persons moving or permitting the movement of animals are required to keep a record in the form specified, showing such movements.

Frequent inspections were made of records kept by farmers, butchers, and cattle dealers during the year to ascertain that the provisions of the Order were being carried out.

Importation of Animals Act, 1922.

A portion of the Bolton Cattle Market is licensed as an Authorised Market for the sale of imported cattle. During the year seven Irish dairy cattle have been licensed by the Ministry of Agriculture to this market. These cattle were inspected on arrival, and when sold, were allowed to be moved to dairy farms under further licences granted by this department.

Animals (Landing from Ireland, Channel Islands, and Isle of Man) Order of 1923.

Under the provisions of this Order the movement of all animals from the above-named Islands to a destination in Great Britain is controlled by licences issued by the Ministry of Agriculture and Fisheries. The checking of these licences and inspection of the imported animals involves a considerable amount of time.

The following imported animals were received in the Borough during 1930 :—

Cattle	...	...	...	6,722
Sheep	...	...	...	18,116
Pigs...	...	...	...	8,389
		Total	...	33,227

Under the provisions of the above Order these animals after arrival at the premises must be detained for a period of six days from the date of arrival thereat, unless previously slaughtered therein. During the said period the animals shall not be moved from the said premises otherwise than under a further licence to be granted by an Inspector of the Local Authority, and then only to a slaughterhouse to be detained therein until slaughtered.

For this purpose 1,215 cattle and 5,358 sheep were moved to slaughterhouses under further licences granted by this Department.

Prosecution.

For failing to detain for a period of six days two Irish cows licensed to his premises, a farmer was convicted and fined £2.

Inspection of Markets.

During the year the cattle market was visited each week when sales were being held, for the purpose of inspecting the animals exposed for sale, and afterwards, in order to supervise the disinfection of the premises.

The following table shows the number of animals examined at the Borough Cattle Market during 1930.

The figures for the previous year are given for comparison :—

Year	Number of Visits	Authorised Market	Cattle Market				
		Irish Dairy Cattle	Cattle	Sheep	Pigs	Calves	Total
1930	52	7	1,476	Nil	127	1,067	2,677
1929	62	236	1,399	49	85	1,135	2,904

Rats and Mice (Destruction) Act, 1919.

During Rat Week 100 large posters were printed and displayed on the hoardings in various parts of the town indicating the extent of damage done by rats every year, and setting out some simple rules to prevent the invasion of premises by rats, and also advising the best methods to be adopted in the destruction of these pests on infested premises.

A large number of complaints were received at the Public Health Office during the week, and in each case the respective premises were visited and suitable advice given.

During the year, rat catchers have been employed with ferrets and dogs on farms, allotments, piggeries, poultry pens, slaughterhouses, public markets, etc., and although it is difficult to form an accurate estimate of the number of rats destroyed, it is known that these efforts have been attended with satisfactory results.

The efforts to exterminate these pests have been continued throughout the year in pursuance of the above Act, when frequent visits have been paid to farms, slaughterhouses, piggeries, poultry pens, butchers' premises, corn warehouses, tripe works, bleachworks, knackers' yards, provision stores, and other premises liable to rat infestation. The importance of the destruction of rats and mice has been pointed out, and vigorous efforts have been made for their extermination.

Disposal of Unsound Meat Voluntarily Surrendered.

The question of compensation for unsound meat voluntarily surrendered was brought before the Public Health Committee in March, 1930, by the Bolton butchers, who claimed that they were entitled to some compensation for such meat.

They asked that if compensation were not granted to them they might be allowed to dispose of unsound meat to private firms to be used for purposes other than that of food for human consumption.

The Public Health Committee was unwilling to take the responsibility of allowing this meat to pass out of its own control and it was resolved, therefore, that for unsound meat voluntarily surrendered to the Public Health Department by members of the Bolton Butchers' Association there should be paid the sum of £4 per ton.

This meat is destroyed in the Corporation's destructor, a proceeding which prevents all possible risk of its being a danger to man or beast.

Sale of Food and Drugs Acts.

ADMINISTRATIVE RETURN OF ACTION TAKEN WITH REGARD TO SAMPLES NOT REPORTED TO BE GENUINE.

Article.	Result of Analysis.	Action taken.
Mussels ...	Sewage Contamination	General warning given to all dealers in mussels in Bolton and supplies from the beds from which the infected mussels were obtained stopped.
Mussels ...	Sewage Contamination	
Milk	1·20% added water	No action taken
Milk	1·20% „ „	do.
Milk	3·4 % „ „	Warning letter sent
Milk	4·5 % „ „	do.

OFFENCES OTHER THAN ADULTERATIONS.—Nil.

Annual Report of the Public Analyst and Bacteriologist

for the year ended December 31st, 1930.

SUMMARY.

	Number of Samples.
Food and Drugs	444
Bacteriological Examinations for the M.O.H.	1,383
Bacteriological Examinations of Milk	258
Miscellaneous Analyses	68
Water Examinations	696
Gas Examinations	288
Examinations for the Public Assistance Officer... ...	46
	3,183

DETAILS OF FOOD AND DRUGS.

	Total.	Genuine.	Adulterated.	Percentage Adulterated.
Milk	146	142	4	2·7
Condensed Milk ...	6	6	...	...
Cream	5	5	...	...
Butter	22	22	...	...
Margarine	15	15	...	...
Lard	4	4	...	...
Cheese...	3	3	...	...
Coffee and Mixtures ...	16	16	...	...
Cocoa	8	8	...	...
Meat Products ...	27	27	...	...
Fish and Fish Pastes	3	1	2	66·6
Cereals...	17	17	...	...
Dried Fruits ...	15	15	...	...
Sweets	28	28	...	...
Condiments and Spices	27	27	...	...
Beverages (Cordials, etc.)	8	8	...	...
Drugs	23	23	...	...
Miscellaneous ...	71	71	...	...
	444	438	6	1·4

BACTERIOLOGICAL EXAMINATIONS.
(For the M.O.H.)

	Total.	Positive.	Negative.	Doubtful.
Tuberculosis	1,025	332	693	...
Diphtheria	332	62	263	7
Fever B. Typhosus ...	26	4	22	...
Para Typhoid A.	26	...	26	...
Para Typhoid B.	26	3	23	...

Food and Drugs.

	Total examined.	Genuine.	Adulterated.
Milk.	146	142	4

All the samples were examined for preservatives and colouring matter. In all cases these were found to be absent.

The satisfactory quality has been maintained, the average (exclusive of skimmed milk) being for the year:—

Milk fat.	Non-fatty solids.	Water.
3·66%	8·85%	87·49%

Minimum limit:—Milk fat, 3·00%; Non-fatty solids, 8·50%

The following table shows the monthly variation:

Month.	No. of samples.	Milk fat.		Non-fatty solids.	
January	1	3·50		8·80	
February	0	—	3·41%	—	8·82%
March	13	3·40		8·82	
April	46	3·55		8·84	
May	12	3·70	3·59%	8 92	8·87%
June	24	3·61		8·88	
July	1	4·10		8·80	
August	0	—	3·77%	—	8·79%
September	15	3·74		8·79	
October	32	3·91		8·85	
November	0	—	3·88%	—	8·84%
December	1	3·00		8·75	

Condensed Milk.

6 samples were examined. These were satisfactory both as regards quality and contents.

Cream.

5 samples were examined. These were fresh cream, and free from preservatives.

Butter.

22 samples have been examined. All were genuine and of good quality being also free from preservatives.

Margarine.

15 samples have been examined. All were sweet and wholesome, and free from preservatives.

Cheese.

3 samples have been examined. These were whole meat of satisfactory fat content. (30 to 35%).

Coffee and Coffee Mixtures.

16 samples have been examined. The mixtures consisted of coffee and chicory only ; one particular brand (Health Coffee) sold as a mixture claimed "Double the strength of other Coffee, less quantity should be used." This claim is obviously extravagant since the sample contained only 50% Coffee.

Cocoa.

8 samples have been examined. These were free from arsenic and showed no excess of husk.

Meat Products.

27 samples have been examined. Of these, 3 were preserved with Sulphur Dioxide (195, 30 and 55 parts per million respectively).

These amounts are within the prescribed limits and were in each case declared.

Vinegar.

7 samples have been examined. All were satisfactory. One sample which was not a product of fermentation was claimed to be "Quite distinct from and superior to Malt Vinegar." It consisted of dilute acetic acid coloured with caramel.

Drugs.

23 samples have been examined. All were of good quality and complied with the requirements of the British Pharmacopœia.

Sweets.

28 samples have been examined. These were examined particularly for arsenic, the large number taken being due to the discovery of poisoned sweets in the Stoke district.

Public Baths.

The water in the plunges at Moss Street, Bridgman Street and High Street have been examined at frequent intervals. Moss Street and High Street reveal a satisfactory condition of purity, B. Coli being generally absent in 10 c.cs.

Bacteriological Examination of Milk.

Vended Milk. (Bottled).

No Ministry of Health Standard.

No. of samples examined...	55
Agar count per 1 c.c.	25,446
No. of samples with B. Coli in 1/100 c.c.	21 or 38·2%
,, ,, ,, 1/10 c.c. absent in 1/100 c.c.	10 or 18·2%
,, ,, ,, 1 c.c. ,, 1/10 c.c.	16 or 29·1%
,, ,, ,, absent in 1 c.c.	8 or 14·5%

The above samples contained total bacteria per 1 c.c. as follows :—

Under 1,000	4
1,000 to 5,000	13
5,000 to 10,000	11
10,000 to 20,000	11
20,000 to 30,000	7
30,000 to 40,000	4
40,000 to 50,000	1
50,000 to 100,000	1
over 100,000	3

"Grade A" Milk.

Ministry of Health Standard :—

Agar count not to exceed 200,000 per 1 c.c.
B. Coli absent in 1/100 c.c.

Number of samples examined	158
Average Agar count per 1 c.c.	9,780
No. of samples with B. Coli in 1/100 c.c.	8 or 5·1%
,, ,, ,, in 1/10 c.c. absent in 1/100 c.c.	8 or 5·1%
,, ,, ,, in 1 c.c. ,, 1/10 c.c.	28 or 17·7%
,, ,, ,, absent in 1 c.c.	114 or 72·1%

The above samples contained total bacteria per 1 c.c. as follows:—

Under 1,000	52
1,000 to 5,000	79
5,000 to 10,000	10
10,000 to 20,000	5
20,000 to 30,000	4
30,000 to 40,000	2
50,000 to 100,000	3
Over 100,000	3

"Certified" Milk.

Ministry of Health Standard:—

Agar count not to exceed 30,000 per 1 c.c.
B. Coli absent in 1/10 c.c.

Number of samples examined	45
Average Agar count per 1 c.c.	2,532
No. of samples with B. Coli in 1/100 c.c.	5 or 11·1%
,, ,, ,, in 1/10 c.c. absent in 1/100 c.c.	2 or 4·4%
,, ,, ,, in 1 c.c. ,, 1/10 c c.	2 or 4·4%
,, ,, ,, absent in 1 c.c.	36 or 80·1%

The above samples contained total bacteria per 1 c.c. as follows:—

Under 1,000	10
1,000 to 5,000	29
5,000 to 10,000	4
10,000 to 20,000	2

Preservatives.

All samples were examined for preservatives (where such might reasonably be expected to be present). Preservatives were found in the following cases:—

3 Meat Products contained 30, 195 and 55 parts Sulphur Dioxide per million.

It is worth noting that all milks, creams, butters and margarines, were free from all preservatives.

Adulterated Samples.

	Number Adulterated.	Extent of Adulteration.
Milk ...	4	1·2 per cent added water
		1·2 ,,
		3·4 ,,
		4·5 ,,
Mussels ...	2	Sewage contaminated.

SECTION VI.

Prevalence of, and Control over, Infectious Diseases.

ACUTE INFECTIOUS DISEASES.

(Notifiable).

The infectious diseases compulsorily notifiable in Bolton are the following:—

Smallpox.
Scarlet Fever.
Diphtheria & Membranous Croup.
Enteric or Typhoid Fever.
Pneumonia (Acute Primary and Acute Influenzal).
Cholera.
Plague.
Puerperal Fever.
Puerperal Pyrexia.
Cerebro-spinal Fever.
Acute Poliomyelitis.
Acute Polio-encephalitis.
Acute Encephalitis Lethargica.
Typhus Fever.
Relapsing Fever.
Continued Fever.
Dysentery.
Ophthalmia Neonatorum.
Erysipelas.
Malaria.
Tuberculosis (Pulmonary and other forms).

Prevalence and Mortality.

Below are shown the number of cases of notifiable diseases notified in Bolton in 1930 and the number of deaths resulting from each of these notifiable diseases.

Notifiable Diseases during the year 1930.

Disease.	Total Cases Notified.	Total Deaths.
Smallpox	4	...
Scarlet Fever...	452	3
Diphtheria	83	3
Enteric Fever (including Paratyphoid)	7	1
Puerperal Fever	8	6
Puerperal Pyrexia	20	...
*Pneumonia	132	133
Erysipelas	101	14
Ophthalmia Neonatorum ...	24	...
Encephalitis Lethargica ...	5	4
Cerebro-spinal Fever ...	...	2
Acute Poliomyelitis	4	...
Dysentery	4	...

* The cases notified are Acute Primary and Acute Influenzal, but the deaths include all forms of Pneumonia.

By notification-rate of any disease is meant the number of cases notified per thousand inhabitants.

The following Table shows how Bolton stands in regard to notifiable infectious diseases when compared with England and Wales.

NOTIFICATION-RATES IN 1930.

	Bolton.	England and Wales.
Smallpox	·28 ...	·29
Scarlet Fever	3·95 ...	2·76
Diphtheria	·40 ...	1·84
Enteric Fever	·06 ...	·07
Puerperal Fever	·02 ...	·06
Puerperal Pyrexia	·08 ...	·14
Erysipelas	·53 ...	·45

Scarlet fever was exceptionally prevalent in Lancashire and other parts of the country during 1930. At the present time (20-7-31) the incidence of scarlet fever in Bolton is exceptionally low.

Smallpox.

During the latter half of 1929 we had in Bolton 52 cases of smallpox of the mild type. The outbreak was dealt with very vigorously and it was brought to a close with 4 cases which occurred in the beginning of 1930. Since then the town has been free from smallpox.

The four cases notified in 1930 were all females, the ages being 43, 53, 56 and 63. They had all been successfully vaccinated in infancy.

The last case was discharged from hospital on the 19th March, 1930.

Scarlet Fever.

The heavy incidence of scarlet fever which prevailed in Lancashire and other parts of the country showed signs of abatement in 1930, although the number of cases notified in 1930 was still much above the average of recent years.

The unusually large number of cases of scarlet fever occurring in adults was, as in 1928 and 1929, a noticeable feature of the disease in 1930.

452 cases of scarlet fever were notified, and of these 215 were admitted to hospital. Three cases of scarlet fever died, one in hospital and two outside.

The number of cases of scarlet fever notified in Bolton in each year since 1920 was as follows :—

Year.	No. of cases notified.
1920	541
1921	591
1922	453
1923	642
1924	269
1925	232
1926	245
1927	276
1928	840
1929	717
1930	452

Encephalitis Lethargica.

5 cases were notified as suffering from encephalitis lethargica during 1930.

Of these cases four died before the close of 1930, the cause of death being certified as follows :

2 died of encephalitis lethargica.
1 died of tuberculous meningitis.
1 died of cerebral hæmorrhage.

The fifth case died during 1931, the cause of death being given as chronic meningo-encephalitis.

One case, not previously notified, was certified as having died of encephalitis lethargica in 1930.

Careful inquiry was made during 1930 as to the number of persons suffering from the consequences of encephalitis lethargica in Bolton. The total number of such cases is about 34. Several cases reported to be suffering from the after effects of encephalitis lethargica were found to be suffering from conditions having no connexion with this disease.

A few of the cases desired institutional treatment, and it is hoped that this may be available before long.

Ophthalmia Neonatorum.

For some unexplained reason there was a considerable increase in the number of cases of ophthalmia notified in 1930.

The total was 24, as compared with 11 in 1929.

In two of these cases there was impairment of vision, which is improving, but in one there was loss of one eye, and considerable impairment of sight in the other.

These three cases were treated at home by their private doctor until the condition grew serious, when they were sent to the Bolton Infirmary for treatment.

All cases are visited daily by one of our health visitors.

One of the notified cases died. At the time of death the eyes were practically cured.

Particulars of the cases notified in 1930 are as follows :

Cases.			Vision.			
Notified	Treated		Un-impair'd	Impaired	Total Blind-ness	Deaths
	At home	In hospital				
24	17	3 as out-patients; 4 as in-patients	20	3	...	1

Puerperal Fever.

Eight notifications of puerperal fever were received during 1930. Of these two died in their own homes.

Five of these cases were treated in hospital. All cases of puerperal fever are recommended to go to hospital, and no charge is made.

Of the cases that died, one was in connexion with abortion and one with miscarriage.

Further details will be found in the maternity and child welfare section.

The following table asked for by the Ministry of Health, gives detailed information regarding all cases of notifiable infectious disease in Bolton during 1930.

NOTIFIABLE DISEASES DURING THE YEAR 1930.

Disease.	Cases Notified.													Cases admitted to Borough and other Hospitals.	Deaths.											
	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65	65 and over	At all Ages.		Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65	65 and over	At all Ages.
Smallpox	...	...	...	...	...	...	...	...	...	...	2	2	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	...	3	14	19	35	213	96	36	31	4	1	...	452	215	...	...	1	...	...	1	...	...	1	...	...	...	3
Diphtheria	...	2	3	2	9	42	11	7	6	...	1	...	83	45	...	...	1	1	1	...	...	...	...	...	...	...	3
Enteric Fever...	...	...	...	...	...	...	2	1	2	1	1	...	7	4	...	...	...	...	...	...	...	...	...	1	...	...	1
Puerperal Fever	...	...	...	...	...	...	...	...	5	3	...	...	8	5	...	...	...	...	...	...	...	...	5	1	...	...	6
*Puerperal Pyrexia ...	...	...	...	...	...	...	...	1	18	1	...	...	20	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia	3	5	5	8	7	23	9	7	26	14	12	13	132	...	19	6	3	3	5	4	2	2	8	8	42	31	133
Erysipelas	1	...	...	...	...	5	3	5	25	16	32	14	101	...	1	...	...	...	...	...	...	1	...	...	6	6	14
Ophthalmia Neonatorum	24	...	...	...	...	...	...	...	...	...	...	...	24	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	..	...	...	1	...	1	...	...	3	...	5	...	...	...	...	...	...	1	...	...	2	...	1	...	4
Dysentery	...	...	1	1	1	...	...	...	1	...	...	...	4	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Acute Poliomyelitis ...	...	2	1	...	...	1	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis																											
a. Pulmonary	...	...	1	...	...	5	5	20	59	28	32	4	154	95	...	1	...	...	...	1	...	11	41	25	32	3	114
b. Non-pulmonary ...	...	...	1	3	3	10	11	5	11	7	5	1	57	7	1	4	1	1	2	4	2	5	6	...	8	2	36

* The cases notified are Acute Primary and Acute Influenzal, but the deaths include all forms of pneumonia.

The incidence of notifiable infectious disease in the towns of Lancashire is shown in the following table which shows how Bolton stands as compared with these towns, in regard to notifiable infectious diseases.

Notification-Rates per 1,000 Population in 1930 in Chief Lancashire Manufacturing Towns.

(Figures compiled from the Registrar-General's Quarterly Returns).

	Total Rate	Scarlet Fever	Diphtheria	Enteric Fever	Puerperal Fever	Puerperal Pyrexia	Ophthalmia Neonatorum
Bury	2·98	1·83	·80	·07	·08	·08	·12
Bolton	**3·25**	**2·49**	**·45**	**·03**	**·04**	**·11**	**·13**
Preston	3·26	1·65	1·22	·01	·07	·24	·07
Burnley	3·86	2·51	·92	·04	·07	·16	·16
Wigan	3·92	2·37	1·24	·02	·09	·15	·05
Barrow-in-Furness...	3·96	3·37	·46	—	—	·04	·09
St. Helens	4·22	2·33	1·48	·02	·14	·12	·13
Blackburn	4·27	2·81	1·07	·06	·05	·12	·16
Salford	6·45	2·89	3·14	·11	·05	·12	·14
Oldham	6·61	5·03	1·20	—	·02	·21	·15
Manchester	6·97	5·05	1·41	·05	·15	·11	·20
Rochdale	7·26	5·41	1·59	—	·06	·16	·04
Bootle	8·80	5·06	3·18	·03	·04	·26	·23
Liverpool...	9·20	3·58	4·67	·06	·04	·14	·71
Warrington ... ...11·07		8·81	2·04	·02	·02	·13	·05

Note—The Total Rate is the total of the above six notifiable diseases.

The rates have been calculated on the adjusted population at the middle of 1929.

INFECTIOUS DISEASES NOT NOTIFIABLE.

Influenza.

I am pleased to record that in 1930 only 42 Bolton residents were certified as having died of influenza. This is the smallest number of deaths from influenza since the terrible year 1918.

Bolton's influenza deaths from 1918 to 1930 are shown below :—

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Deaths	367	301	70	45	122	94	88	98	68	147	55	208	42

Whooping Cough.

Only 8 deaths were due, in Bolton, in 1930 to whooping cough. In 1929 the number was 85.

No really effective treatment for whooping cough has yet been discovered.

The mortality from whooping cough in Bolton and in England and Wales is shown below.

Year.	Bolton.		England & Wales.
	No. of Deaths.	Rate per 1,000	Rate per 1,000
1920	34	·19	·18
1921	25	·13	·12
1922	13	·07	·16
1923	11	·06	·10
1924	28	·15	·10
1925	32	·17	·15
1926	37	·20	·10
1927	1	·00	·09
1928	9	·04	·07
1929	85	·46	·15
1930	8	·04	·05

Measles.

4 deaths occurred in 1930 as compared with 11 in 1929.

The table below shows the death-rate for measles for Bolton and for England and Wales since 1920.

Year.	Bolton.		England & Wales.
	No. of Deaths.	Rate per 1,000	Rate per 1,000
1920	27	·27	·27
1921	5	·02	·05
1922	63	·34	·14
1923	4	·02	·13
1924	12	·06	·12
1925	18	·09	·13
1926	16	·09	·09
1927	21	·11	·09
1928	17	·09	·11
1929	11	·06	·08
1930	4	·02	·10

Examination of Pathological and Bacteriological Specimens.

These are examined at the Borough Analyst's Laboratory of the County Borough of Bolton. Occasional specimens for which provision is not made in our own laboratory are sent to the Public Health Laboratory, York Place, Manchester.

The examinations made in our own laboratory during 1930 were as follows:—

	Total	Positive	Negative	Doubtful
Sputum (for B. Tuberculosis) ...	1,025	332	693	—
Diphtheria (Throat Swabs) ...	332	62	263	7
Enteric Fever (Agglutination test)	26	4	22	—

At the Public Health Laboratory, Manchester, the following examinations were made:—

	Total	Positive	Negative
Milk (Inoculation test for B. Tuberculosis)	21	7	14
Diphtheria (Throat Swab)	1	—	1

Diphtheria Antitoxin.

Antitoxin can be had day and night by the medical practitioners of the town. During 1930 there were supplied 57 phials, each of 8,000 units.

Insulin.

Since the 16th of September, 1924, the Bolton Public Health Department has supplied insulin free to uninsured patients suffering from diabetes where the income of such patients made it impossible for them to purchase the drug. This has proved a great boon to many sufferers. During 1930, 270 bottles of insulin each containing 100 units, were supplied free, and 462 bottles of 100 units and 54 bottles of 200 units were supplied at a cheap rate.

Disinfection.

There is a fully equipped disinfecting station at School Hill, near the centre of the town. Two motor vans are attached to this station. During 1930 the following work was done by the disinfecting station:

Houses disinfected	772
Articles of clothing, etc., disinfected	4,897
Articles of bedding, etc., destroyed	98

Cleansing of Verminous Persons.

Arrangements have been made for the bathing of such persons at one of the Corporation's bathing establishments. Clothing is disinfected or destroyed at the School Hill Disinfecting Station.

WORK OF THE BOROUGH ISOLATION HOSPITALS.

Scarlet Fever.

As compared with 1929 the prevalence of scarlet fever in Bolton in 1930 showed considerable abatement.

219 cases were admitted to the scarlet fever wards of the Borough Hospital for Infectious Diseases. The number in 1929 was 410.

Amongst the patients admitted to the scarlet fever ward :

1 had scarlet fever and measles.
1 had scarlet fever and lobar pneumonia.
4 showed at the time of admission, and after, no evidence of any disease.

All cases not definitely mild receive the scarlet fever antitoxin, a most valuable therapeutic agent.

The great majority of the cases were mild and, with the exception of the case that died, there were no complications which resulted in chronic infirmity.

The complications which occurred were as follows :

11 cases of otorrhœa.
10 cases of albuminuria.
1 case of cellulitis of the neck.
2 cases of rheumatism.
1 case of mild mastoid, not requiring operation.

We had ten return cases in 1930. A return case is a case occurring in the home of a discharged patient within four weeks of the return home of such patient.

It is impossible to prevent return cases. In spite of the greatest care in seeing that patients at the time of their discharge are free from infection, in so far as such freedom can be established by clinical examination, these cases occur in connexion with every infectious diseases hospital.

Although these cases are called return cases on the assumption that they were infected by the discharged patient, it is quite certain that this is not so in many cases. They are infected in the same way that the first case was infected. There may be contact with a carrier, for it is certain that there are carriers of scarlet fever.

Period of Stay in Hospital.

The tendency at present throughout the country is to reduce very greatly the period of hospital treatment for scarlet fever. Very few patients at the Borough Hospital are kept in less than five weeks, and many are kept in much longer.

Diphtheria.

49 cases sent in as diphtheria were admitted to the diphtheria wards. Of these—

1 had scarlet fever only.
2 had diphtheria and scarlet fever.
1 had follicular tonsillitis.
1 had venereal disease.
1 had pharyngeal tuberculosis.

One patient required tracheotomy and made a good recovery. This was the only tracheotomy case.

There were no deaths.

Cases of diphtheria are removed to hospital as quickly as possible. The matron of the fever hospital has full authority to admit diphtheria cases on the request of a medical man.

Enteric Fever.

Four cases of enteric fever were admitted during 1930. One of these patients died.

Smallpox.

4 cases were admitted in 1930. These were the last cases of the outbreak that occurred during 1929. They all made a good recovery, and the last patient was discharged on March 19th, 1930. Since then we have been free from smallpox.

Hospital Staff.

With the exception of one case of scarlet fever there was no infectious disease in members of the hospital staff during 1930, nor was there any serious disease of any sort.

I have great pleasure in expressing once more my appreciation of the untiring devotion and ability with which the Matron, Miss Bateman, discharges the duties of her office.

I am also greatly indebted to the nursing and domestic staff for loyal co-operation in all measures for the good of the patients.

There are no better friends of the hospital than those who have been its patients.

Borough Isolation Hospitals.

No. of Patients.	No. of patients suffering from the following Diseases.						Total.
	Scarlet Fever.	Enteric Fever.	Diphtheria.	Pulmonary Tuberculosis.	Other Tuberculous Diseases.	Other Diseases.	
Remaining, Dec. 31st, 1929	24	...	10	17	...	20	71
Admitted in 1930	215	4	45	20	...	12	296
Total No. treated, 1930 ...	239	4	55	37	...	32	367
Discharged in 1930	194	3	50	14	...	32	293
Died in 1930	1	1	...	3	...	...	5
Remaining, Dec. 31st, 1930	44	...	5	20	...	...	69

VACCINATION.

The following is a summary of the return for 1929 made to the Registrar-General by the Vaccination Officer respecting the vaccination of children whose births were registered in the County Borough of Bolton from 1st January, 1929 to the 31st December, 1929, inclusive.

No. of births registered 2,528

On the 31st January, 1931, of the above children—

789 or 31·2% were successfully vaccinated,
8 or ·3% were insusceptible of vaccination,
None had had smallpox,
1,566 or 62·0% of their parents made the statutory declaration of conscientious objection,
137 or 5·4% died unvaccinated,
5 or ·2% were temporarily unfit to be vaccinated,
8 or ·3% had removed out of Bolton,
11 or ·4% could not be traced,
and 4 or ·2% had not been duly vaccinated or otherwise accounted for.

The total number of certificates of successful primary vaccination of children under 14 received during the calendar year, 1930, was 741, and the number of statutory declarations of conscientious objection received during the same period was 1,599.

The number of persons successfully vaccinated and re-vaccinated at the cost of the Bolton rates by the local Public Vaccinators during the year ended 30th September, 1930, was as follows :—

No. of successful primary vaccinations		
Under one year of age	509	
One year and upwards	435	
		944
No. of successful re-vaccinations of persons who had been successfully vaccinated at some previous time...		934
Total vaccinations by Public Vaccinators ...		1,878

SECTION VII.

Tuberculosis.

TUBERCULOSIS.

The death-rate from tuberculosis of all forms was ·82 for Bolton in 1930. This compares with a death-rate of ·79 in 1929.

But the total number of new cases notified in 1930 was 211 as compared with 231 in 1929. This shows that there has been no interruption in the success with which tuberculosis is being fought and steadily overcome.

The death-rate from tuberculosis of all forms during 1930 in the Lancashire County Boroughs was as follows:—

Blackpool	·66	Preston	·99
Southport	·74	Barrow-in-Furness ...	1.01
BOLTON	·82	Oldham	1·17
Bury	·82	Manchester... ...	1·37
Burnley	·90	Liverpool	1·39

New Cases.

The number of new cases notified in 1930 was:—

Pulmonary	154
Non-pulmonary	57
Total ...	211

How does Bolton stand as regards deaths from tuberculosis when compared with England and Wales as a whole? This is set forth in the following table.

Annual Death-rate from Tuberculosis (All Forms) Bolton and England and Wales, 1901-1930.

Year.	Rate per 1000 living. Bolton.	England and Wales	Year.	Rate per 1000 living. Bolton.	England and Wales
1901	1·94	1·80	1916	1·43	1·52
1902	1·81	1·74	1917	1·53	1·60
1903	1·81	1·74	1918	1·57	1·66
1904	1·79	1·78	1919	1·18	1·28
1905	1·61	1·63	1920	1·00	1·13
1906	1·73	1·65	1921	1·08	1·12
1907	1·45	1·61	1922	·97	1·12
1908	1·75	1·59	1923	1·11	1·06
1909	1·54	1·53	1924	1·12	1·05
1910	1·41	1·43	1925	1·02	1·03
1911	1·40	1·46	1926	·92	·96
1912	1·29	1·37	1927	1·02	·97
1913	1·15	1·35	1928	·77	·93
1914	1·19	1·36	1929	·79	·96
1915	1·32	1·51	1930	·82	·89

It will be seen that Bolton stands this comparison very well. For the past three years the Bolton tuberculosis death-rate has been lower than that for England and Wales.

Age and Sex Distribution of Cases of tuberculosis notified in Bolton in 1930.

Pulmonary Tuberculosis.

Ages.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards.	Total.
Males	...	1	2	1	6	13	16	17	19	4	2	81
Females ...	...	...	3	4	14	15	15	11	6	3	2	73

NON-PULMONARY TUBERCULOSIS.

Ages.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards.	TOTAL.
Males	...	5	8	6	2	4	3	2	...	3	...	33
Females ...	...	2	2	5	3	1	3	5	2	...	1	24

DEATHS FROM TUBERCULOSIS.

150 Bolton residents were certified as having died of tuberculosis during 1930. This compares with 145 in 1929.

69 of these deaths took place in institutions as follows :—

3 died in the Bolton Borough Hospital.

1 died in the County Mental Hospital, Prestwich.

45 died in Townleys Hospital.

1 died in Fishpool House.

6 died in the Bolton Infirmary.

1 died in the Sanatorium, Elswick.

6 died in the Wilkinson Sanatorium.

1 died in the Royal Liverpool Children's Hospital, Heswall.

1 died in the County Mental Hospital, Whittingham.

1 died in the County Mental Hospital, Winwick.

2 died in the County Mental Hospital, Lancaster.

1 died in the Royal Manchester Children's Hospital.

Four of the deaths were of casuals in Townleys Hospital. Technically they are assigned to Bolton, but they were not in any real sense of the word resident.

The age and sex distribution of those who died of tuberculosis are given in these tables:

Pulmonary Tuberculosis.

Sex.	Total	AGES.								
		Under 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 55	55 to 65	65 and upwards
Males	60	1	...	...	6	17	11	15	7	3
Females...	54	...	1	...	5	24	14	5	5	...
Total	114	1	1	...	11	41	25	20	12	3

Non-pulmonary Tuberculosis.

Sex.	Total	AGES.								
		Under 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 55	55 to 65	65 and upwards
Males	18	4	3	1	2	1	...	1	5	1
Females...	18	5	1	1	3	5	...	2	...	1
Total	36	9	4	2	5	6	...	3	5	2

In 30 cases the disease had not been notified during life. Most of these cases died in institutions and the diagnosis was made after death.

Public Health (Prevention of Tuberculosis) Regulations, 1925.

No action was taken under these Regulations.

Public Health Act, 1925, Section 62.

No action was taken under the above Section during 1930.

Cases of tuberculosis of the skin are treated at the Manchester and Salford Skin Hospital, and payment for the treatment of such cases, either as in or out-patients, is made by the Bolton Public Health Department.

In Bolton, institutional treatment for tuberculosis is given very promptly to all patients desiring it and who are deemed suitable cases for such treatment. It is rare for a patient to wait more than a week.

177 persons applied for treatment in 1930. 143 of these were cases of pulmonary tuberculosis and 34 of non-pulmonary tuberculosis.

The treatment given was as follows:

Residential treatment	101
Domiciliary treatment	48
Out-patient treatment	20
Declined residential treatment... ...	—
On waiting list at close of 1930 ...	7
Application withdrawn...	1

No patient desiring residential treatment was refused such treatment.

Tuberculosis Dispensary.

The dispensary is not a place for the general treatment of tuberculosis. Special treatments such as tuberculin treatment are given. Any new treatment for which a specific effect on tuberculosis is claimed is given a trial if the evidence in favour of such treatment appears to justify a trial. Up to now all such treatments with the exception of tuberculin have failed to justify the claims made for them.

The dispensary is open every week-day (except Saturday) from 9 a.m. to 12 noon and on Wednesday from 2 p.m. to 5 p.m. The work done at the dispensary is shown by the following figures:—

Total attendances	1,844
Total number of patients sent for consultation ...	213

The results of these consultations were as follows:

Number found to have pulmonary tuberculosis ...	96
Number found to have non-pulmonary tuberculosis...	36
Number of cases kept under observation for suspected pulmonary tuberculosis	—
Number in whom no evidence of tuberculosis was found	81

11 patients had tuberculin treatment. They made a total of 284 attendances.

Treatment of Tuberculosis.

For suitable cases, institutional treatment is given as follows :

30 beds (and more if needed) at the Wilkinson Sanatorium.
24 beds at the Borough Hospital.

All these beds are for pulmonary cases.

Cases of surgical tuberculosis requiring institutional treatment are sent to the Bolton Infirmary and to the Liverpool Children's Hospital at Heswall in Cheshire, where we have a call on 6 beds.

The following table summarizes the residential treatment given during 1930.

Accommodation Provided by Local Authority with Number of Persons Admitted for Treatment During the Year 1930.

Institution.	Beds.	Treated:			Under Treatment 31st Dec. 1930.
		Total	Insured	Un-insu'd	
Wilkinson Sanatorium	30	75	59	16	27
Borough Hospital	24	20	15	5	20
*Heswall	6	1	...	1	2
*Infirmary	...	4	1	3	...
*Manchester and Salford Hospital for Skin Diseases	...	1	...	1	...
*Heatherwood Hospital, Ascot ...	...	...	...	...	2
*Ancoats Hospital, Manchester	...	1	...	1	...

* Paid for per user.

Manchester and Salford Skin Hospital

35 patients suffering from tuberculosis of the skin were referred for advice and treatment to the Manchester and Salford Skin Hospital.

One of these patients was admitted for in-patient treatment, and the period this case was in hospital was 82 days.

Of the 34 patients who attended as out-patients, 11 received sunlight treatment, and 23 received various other treatments. The total number of attendances made by the out-patients was 1,416.

Most of the patients sent to the Manchester and Salford Skin Hospital got great benefit from the treatment received.

The Bolton Public Health Department pays for the treatment of all patients referred by it to the Manchester and Salford Skin Hospital.

In eleven cases of patients who received out-patient treatment, travelling expenses were defrayed by the Bolton Public Health Department, as the patients' means did not permit of their bearing this cost themselves.

Assistance Given to Necessitous Tuberculous Patients.

1.	Total number of patients assisted	178
2.	Average time receiving assistance ...	5 months
3.	Amount of milk given	25,119 pints
4.	Malt and oil given	320 lbs.

SECTION VIII.

Venereal Diseases.

Venereal Diseases.

During 1930 the venereal diseases clinics were as usual, very busy. The importance of the work done by these clinics is of immense importance to the patients and to the community at large.

These clinics are so conducted as to attract as little as possible the attention of the general public, and so as to secure for the patients the greatest privacy possible.

The clinics are conducted on the premises of the Public Health Department in Howell Croft, North.

The work of the clinics is very much hindered by the insufficiency of the present premises. It is extremely desirable that there should be entirely separate premises for women. Such provision is really urgently necessary.

The times and place where the clinics are held are announced by public notices in many places in the town.

The times at which the clinics meet are as follows :—

Monday	7-0 p.m.	Males.
Tuesday	7-0 p.m.	
Wednesday	7-0 p.m.	
Thursday	7-0 p.m.	Females.
Saturday	10-30 a.m.	

Patients who are unable to attend the evening clinics can receive treatment during the day by arrangement. Every case which calls for the first time at the Public Health Office receives whatever treatment may be necessary the same day.

Irrigation of cases of gonorrhœa is carried out at the following times :—

For Males.

Monday	10 a.m. and 7 p.m.
Tuesday	7 p.m.
Wednesday	10 a.m. and 7 p.m.
Friday	10 a.m. and 7 p.m.

For Females.

Tuesday ...	...	...	...	10 a.m.
Wednesday	...	...	...	2-30 p.m.
Thursday	...	...	...	2-30 p.m.
Friday ...	...	...	...	2-30 p.m.

Statistics of Number of Patients and Number of Attendances at the Venereal Diseases Clinics in 1930.

The number of patients who attended the clinics in 1930 was :—

Men ... 952 Women ... 313

The diseases from which they suffered were :—

	Men	Women	Total
Syphilis	237	148	385
Soft Chancre	—	—	—
Gonorrhœa	558	50	608
Non-venereal	157	115	272
	952	313	1,265

The above figures give the total number of patients who attended the clinics during 1930. The numbers of new patients who came under treatment for the first time in 1930 were as follows :—

	Men	Women
Syphilis...	56	36
Soft Chancre	—	—
Gonorrhœa	189	11
Non-venereal	134	101
	379	148

Attendances.

The total numbers of attendances made by patients at the clinics were

Men ... 10,547 Women ... 1,963

476 specimens of blood were taken for the Wassermann test. These are examined at the Public Health Laboratory, Manchester.

Patients received 1,687 intravenous injections of salvarsan substitutes.

The following table shows the attendances and treatment received by Bolton patients at Treatment Centres in other towns.

	Treatment Centre			
	Manchester	Bury	West Hartlepool	Salford
No. of Patients ...	14	2	1	12
(a) Syphilis ...	4	1	...	2
(b) Gonorrhœa	4	...	...	3
(c) Conditions other than Venereal ...	6	1	...	7
Attendances ...	303	26	1	268
Doses of Salvarsan substitutes given	24	7	1	40
Tests—				
Wassermann ...	23	...	...	...
Gonorrhœa ...	23	...	...	...
In-patient days ...	120	...	...	...

The tables on pages 118 and 119 show the work carried out at the Bolton Treatment Centre.

6 medical men applied during 1930 for arsenobenzene compounds and 101 doses were supplied to them for use in their private practices.

175 specimens of blood and 39 smears taken by private practitioners were sent for examination to the Public Health Laboratory, Manchester.

RETURN RELATING TO ALL PERSONS WHO WERE TREATED AT THE TREATMENT CENTRE AT BOLTON PUBLIC HEALTH OFFICES DURING THE YEAR ENDED THE 31ST DECEMBER, 1930.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1. Number of cases which—										
(*a*) at the beginning of the year under report were under treatment or observation for	158	105	...	...	337	36	23	14	518	155
(*b*) had been marked off *in a previous year* as having ceased to attend or as transferred to other Centres, and which returned to the Treatment Centre during the year under report *suffering from the same infection*	23	7	...	...	32	3	...	...	55	10
TOTAL—Items 1 (*a*) and 1 (*b*)	181	112	...	...	369	39	23	14	573	165
2 (*a*). Number of cases dealt with at the Treatment Centre during the year *for the first time* with infections of—										
1. *less* than one year's standing	42	28	...	...	163	11	134	101	339	140
2. *more* than one year's standing	14	8	...	...	26	...	...	...	40	8
TOTAL*—Items 1 (*a*), 1 (*b*) and 2 (*a*)	237	148	...	...	558	50	157	115	952	313
2 (*b*). Number of cases *included* in item 2 (*a*) known to have received *previous treatment at other Centres* for the same infection	7	1	...	...	10	...	...	...	17	1
3. Number of cases which ceased to attend—										
(*a*) before completing the first course of treatment for	14	11	...	...	128	9	...	...	142	20
(*b*) after one or more courses but before completion of treatment for	20	25	...	...	...	...	...	...	20	25
(*c*) after completion of treatment, but before final tests as to cure of	15	8	...	...	42	7	...	...	57	15
4. Number of cases transferred to other Treatment Centres after treatment for	3	...	...	...	6	...	...	...	9	...
5. Number of cases discharged after completion of treatment and observation for	9	6	...	...	49	11	132	91	190	108
6. Number of cases which, at the end of the year under report, were under treatment or observation for	176	98	...	...	333	23	25	24	534	145
TOTAL*—Items 3, 4, 5 and 6	237	148	...	...	558	50	157	115	952	313
7. Out-patient attendances—										
(*a*) For individual attention by the Medical Officer ...	2346	1059	...	...	2949	208	501	373	5796	1640
(*b*) For intermediate treatment, *e.g.*, irrigation, dressings, etc.	...	...	...	...	4696	323	55	...	4751	323
TOTAL ATTENDANCES	2346	1059	...	...	7645	531	556	373	10547	1963
8. Aggregate number of "In-patient Days" of treatment given to persons who were suffering from	...	...	...	...	..	...	...	...	...	...

9. Examinations of Pathological material :—	For Detection of			For Wassermann Reaction.
	Spirochetes	Gonococci.	Other Organisms.	
(*a*) Specimens which were examined at, and by the Medical Officer of, the Treatment Centre	...	237	...	...
(*b*) Specimens from persons attending at the Treatment Centre which were sent for examination to an approved laboratory ...	...	9	...	476

*The total of Items 1 (*a*), 1 (*b*) and 2 (*a*) in the vertical columns headed Syphilis, Soft Chancre and Gonorrhœa should agree with the corresponding total of Items 3, 4, 5 and 6.

STATEMENT SHOWING THE SERVICES RENDERED AT THE TREATMENT CENTRE DURING THE YEAR, CLASSIFIED ACCORDING TO THE AREAS IN WHICH THE PATIENTS RESIDED.

Name of County or County Borough.	Bolton C.B.	Lancs. C.C.	Bury C.B.	Brighton C.B.	Rochdale C.B.	Stockport C.B.	Manch'ter City	Oldham C.B.	Wigan C.B.	TOTAL.
A. Number of cases from each area dealt with during the year *for the first time* and found to be suffering from :—										
Syphilis	64	27	1	...	...	...	...	...	...	92
Soft Chancre	...	...	...	...	...	...	...	...	...	...
Gonorrhœa	116	80	...	1	2	1	...	...	...	200
Conditions other than Venereal	169	63	2	...	1	...	...	...	...	235
TOTAL	349	170	3	1	3	1	...	...	...	527
B. Total number of attendances of all patients residing in each area ...	7689	4601	145	1	8	25	13	1	27	12510
C. Aggregate number of "In-patient days" of all patients residing in each area	...	...	...	...	...	...	...	...	...	...
D. Number of doses of arsenobenzene compounds given in the :— 1. Out-patient Clinic	1112	555	10	...	...	...	10	...	...	1687
2 In-patient Dept.	...	...	...	...	..	...	...	...	...	...
to patients residing in each area.										

E. Give the names of arsenobenzene compounds used in the treatment of Syphilis and the usual initial and final doses.

For Males—·45 NAB. (initial dose) ·60 NAB. (final dose).
For Females—·30 NAB. (initial dose) ·45 NAB. (final dose). (See also F.)

F. State the amount and kind of treatment usually administered to a case of Syphilis of each of the types usually dealt with at the Treatment Centre.

For all sores, primary, etc., local treatment is given, Lotio Nigra, Pulv. Cal., and ZnO. etc. For the constitutional invasion we use Novarsenobillon, Stabilarsan (intravenously), Sulfarsenol (subcutaneously) and Bismuth (intramuscularly). A course rarely consists of less than 12 injections. The further treatment of the case is determined by the clinical condition and blood reaction.

G. State the nature of tests applied in deciding as to discharge of patients referred to in Item 5 on previous page.

SYPHILIS—The procedure outlined in Memo V21 is carried out.

GONORRHŒA— Patients are not discharged until they have been free for at least 6 months from all clinical evidence of gonorrhœal infection. If considered desirable, prostatic massage is done and smear examined.

SECTION IX.

Maternity and Child Welfare.

MATERNITY AND CHILD WELFARE.

Births.

The number of children born to Bolton parents in 1930 was 2,514.

Of these births 2,419 were legitimate and 95 illegitimate.

28 births were not notified as compared with 67 in 1929. Careful inquiry was made in every case and in none was any intention to deceive found.

The birth-rate for Bolton was 13·8 in 1930.

The following table gives the birth-rate for the last ten years for England and Wales and for Bolton.

Year.	Birth-rate.	
	England & Wales.	Bolton.
1921	22·4	21·0
1922	20·4	18·6
1923	19·7	17·5
1924	18·8	17·6
1925	18·3	16·3
1926	17·8	16·3
1927	16·6	15·1
1928	16·7	14·3
1929	16·3	14·2
1930	16·3	13·8

The fall in Bolton's birth-rate follows closely the fall in the birth-rate for England and Wales. The causes producing the fall in Bolton are exactly the same as those bringing about the fall in the birth-rate of England and Wales. A fall in the birth-rate throughout the whole world would probably be the most effective form of "disarmament."

Infantile Mortality.

Bolton's infantile mortality-rate for 1930 was 69, the second lowest ever recorded for Bolton, the lowest being 64 in 1928.

Of the fifteen large towns of Lancashire only two had, in 1930, a lower infantile mortality than Bolton. I am satisfied that this infantile mortality is definitely correlated with the activities of our maternity and child welfare services.

Of Bolton's 2,514 births in 1930, 2,419 were legitimate and of these the mortality-rate was 66. For the 95 illegitimate children the mortality-rate was 157.

In the following table is given the average infantile mortality for five year periods from 1876 to 1920 and for each year from 1921 to 1930.

Quinquennium.	Average rate.	Year.	Rate.
1876-1880	171	1921	96
1881-1885	169	1922	93
1886-1890	173	1923	85
1891-1895	185	1924	92
1896-1900	173	1925	87
1901-1905	157	1926	101
1906-1910	134	1927	75
1911-1915	128	1928	64
1916-1920	100	1929	103
		1930	69

1928 was an exceptional year, not only for Bolton, but for a great part of the country.

Neo-Natal Mortality.

By neo-natal mortality is meant the mortality of the first four weeks of life.

It is due mainly to causes which have been at work before birth.

The following table gives the neo-natal mortality-rate for Bolton since 1905. It will be seen that it has not varied much in the last twenty-six years. It is obvious that the causes that give rise to premature birth have not been much influenced for the better during that period.

BOLTON'S NEO-NATAL MORTALITY-RATE PER 1,000 BIRTHS.

Year.	Rate.	Year.	Rate.
1905	46·8	1918	38·9
1906	36·7	1919	40·3
1907	44·6	1920	38·9
1908	37·3	1921	41·2
1909	45·4	1922	43·0
1910	36·7	1923	37·6
1911	43·2	1924	35·5
1912	38·7	1925	32·8
1913	41·7	1926	43·7
1914	45·8	1927	36·2
1915	37·8	1928	25·8
1916	40·1	1929	38·3
1917	49·8	1930	34·6

The causes of death during the first four weeks of life were as follows:—

Deaths under Four Weeks.

CAUSES OF DEATH.	Under 7 days	7 and under 14 days	14 and under 21 days	21 and under 28 days	Total under 28 days
Icterus Neonatorum	1	—	—	—	1
Convulsions	1	—	2	—	3
Bronchitis	—	—	—	—	—
Pneumonia (all forms)	—	—	—	1	1
Diarrhœa	—	—	—	—	—
Enteritis	—	2	1	—	3
Syphilis	—	—	—	—	—
Suffocation	—	—	—	—	—
Injury at Birth	4	1	—	—	5
Atelectasis	4	1	—	—	5
Congenital Malformations	7	—	—	—	7
Premature Birth	39	1	4	4	48
Atrophy, Debility and Marasmus	3	1	—	2	6
Other Causes	5	1	2	—	8
Totals	64	7	9	7	87

Maternal Deaths.

The maternal mortality is the number of maternal deaths per thousand live births.

The Ministry of Health's definition of maternal deaths is deaths taking place "in or in consequence of childbirth."

It is usual, however, to include in maternal deaths such deaths as take place at any period of pregnancy, if such deaths are attributable to pregnancy.

We had in 1930 in Bolton, 13 deaths due to conditions arising out of childbirth, and 4 deaths attributable to pregnancy in its earlier stages, a total of 17 maternal deaths.

This gives for Bolton in 1930 a maternal death-rate of 6·7.

If, however, we take into account such deaths only as took place "in or in consequence of childbirth," then the maternal death-rate is 5·2.

The home conditions were reported to be as follows :

6 good.
6 fair.
5 poor.

Full details of all maternal deaths are sent to the Ministry of Health.

How are such maternal deaths as are preventable to be prevented ? By providing skilled care before, during and after confinement.

The training and status of midwives must be improved.

This can only be done by seeing that the practice of skilled midwifery is adequately rewarded. At present the midwives give a better service than could reasonably be expected in return for their very poor remuneration.

For difficult cases there is needed a special medical service to respond to the call of the midwife.

The causes which lead to the conditions resulting in maternal deaths are very imperfectly understood at the present time. I do not believe that any capable and experienced medical practitioner is of opinion that a majority of these deaths are "easily preventable." The prevention of such of them as can be prevented will be found in the provision for all cases of a highly skilled midwife and, where needed, a highly skilled medical specialist.

Whilst there is still much room for improvement no fair-minded person having knowledge of the subject will deny that childbirth at the present time takes place under much better conditions as regards environment and skilled attendance than it did 40 years ago. If maternal deaths are due to bad environment and to lack of skilled attendance, is it then conceivable that the improvement of the last 40 years in these respects has borne no fruit.

I am confident that improvement has taken place. The fact that the mortality rate shows little change is the result of increased accuracy in the certification of deaths. Many deaths are now classified as maternal deaths which in former years were classified under headings showing no connexion with childbirth. Every competent medical practitioner of some years standing is aware of this fact. If no improvement had taken place one would be almost justified in concluding that no improvement was possible.

Of our 17 maternal deaths 6 were due to puerperal sepsis.

The maternal mortality-rates for Bolton and England and Wales for the past ten years are as follows:—

Year.	Maternal Mortality.	
	England & Wales.	Bolton.
1921	3·9	4·4
1922	3·8	4·1
1923	3·8	4·0
1924	3·9	7·8
1925	4·0	4·7
1926	4·1	3·4
1927	4·1	4·4
1928	4·4	3·0
1929	4·3	8·5
1930	4·4	6·7

The Health Visitors' Work.

No work in connexion with a Health Department is more important than that of Health Visitors. Their daily contact with the homes gives them exceptional opportunities for spreading health truths and exercising generally an influence for good.

The Bolton Health Visitors have carried out their duties with zeal, tact and energy. They have shown a real interest in their work which cannot fail to produce good results.

Visits by Health Visitors.

Primary birth enquiries	2,559
Visits to children, 1—5 years	2,465
Primary visits to expectant mothers	587
Revisits to infants under 1 year	5,469
Revisits to children, 1—5 years	2,410
Revisits to expectant mothers	1,314
Visits to puerperal fever cases	81
Visits to ophthalmia cases	778
Death enquiries made	165
Visits to midwives' houses	204
Total visits	16,032

The health visitors paid visits to 2,414 living infants.

They reported as follows on the infants visited:—

1,809 were breast fed only; of these 49 died.
240 were partially breast fed; of these 46 died.
365 were artificially fed; of these 70 died.

Of the infants visited 2,176 were reported to be healthy, 144 delicate, and 94 premature.

2,400 of the homes visited were reported to be clean, and 180 dirty.

50 nuisances were dealt with as a result of reports made by the Health Visitors.

Assistance given to Expectant and Nursing Mothers and Children under 5 years of age.

55.171 quarts of new milk were given to 916 persons.

1,316 lbs. of dried milk were given for the use of 101 infants.

1,443 lbs. of malt and oil were given to 269 children.

All these cases are kept under observation and, unless under treatment by a doctor, are required to attend the infant clinics.

No application for a home help was received. For several years now no such application has been refused.

Infant Clinics and School for Mothers.

The highly successful work carried on in partnership by the Bolton Public Health Authority and the Bolton School for Mothers has, during 1930, continued to confer on the mothers and children of Bolton the very greatest benefits.

I take this opportunity to thank the voluntary workers of the School for Mothers for the excellent work they have done for Bolton, and to express the opinion that their organisation has thoroughly deserved the confidence reposed in it, and the support it has received from public funds.

In Bolton voluntary workers have in this sphere of action more than justified their claims to recognition and support by the public authority.

The eight centres and the times at which meetings take place at them are as follows:

Name and Address of Centre.	Day and Time of Meeting.
The Friends' School Room, Tipping Street ...	Monday 3 p.m.
St. Matthew's Mission Room, James Terrace ...	Monday 3 p.m.
Halliwell Road Free Church	Tuesday 3 p.m.
Victoria Wesleyan School, Grecian Crescent ...	Tuesday 3 p.m.
Girls' Club, Kensington Street	Wednesday 3 p.m.
St. Chad's School, Belvoir Street	Wednesday 3 p.m.
The Saviour's Church House, Deane Road ...	Thursday 3 p.m.
Peace Street United Methodist School	Thursday 3 p.m.

The attendances at the clinics during 1930 were as follows:

	New Members	No. on Roll	Total Attendances	Meetings	Average Attendance
1. Tipping Street	159	318	2,473	42	58·8
2. Peace Street	142	255	1,685	44	38·2
3. Halliwell	212	360	1,991	43	46·3
4. Grecian Crescent	167	279	1,859	44	42·2
5. Kensington	208	305	1,880	44	42·7
6. Saviour's	132	234	1,805	44	41·0
7. James Terrace	143	231	1,480	42	35·2
8. St. Chad's	182	311	2,202	44	50·0
	1,345	2,293	15,375	347	354·4

The total number of new members enrolled at the centres in 1930 was 1,345. The number for 1929 was 1,318. This is an increase of 27 in 1930.

The age distribution of the children enrolled at the various centres was as follows:

Under one month	323
,, two months	366
,, three months	179
,, six months	144
,, twelve months	113
Twelve months and over	220

The total number of children under the age of 12 months in 1930 was 1,125. This shows an increase of 34 over 1929. The number of children under 12 months of age enrolled in 1930 was nearly 50 per cent. of the children born in Bolton during the same year. The importance to the social life of Bolton of the service provided by these clinics is evident.

Ante-Natal Work.

5 ante-natal clinics are conducted by the Public Health Authority.

At these clinics expectant mothers are examined and advised by the doctor in charge of the clinic, and in addition short addresses are given by Miss Steeples and other Health Visitors.

Particulars of these clinics are as follows:

Place.	Day and Time.
School for Mothers, 70, St. George's Road	Tuesday, 10 a.m. and Tuesday, 3 p.m.
Haslam Maternity Home	Wednesday, 2 p.m. and Friday, 10-30 a.m. and 2 p.m.

All patients entered on the admission list of the Haslam Maternity Home are required to attend the ante-natal clinic at the Home unless they are having definite ante-natal care from their own doctor.

The total number of expectant mothers who attended our ante-natal clinics during 1930 was 732. These expectant mothers made during the year a total of 3,508 attendances.

Sterilised maternity outfits are supplied at a very small charge and, in approved cases, free.

Massage.

This clinic is conducted by the kind permission of the Bolton Education Authority in quite suitable rooms at Flash Street Special School.

The clinic was held as follows:

Monday and Thursday	10 a.m. to noon and 2 p.m. to 5 p.m.
Wednesday and Friday	2 p.m. to 5 p.m.

The number of cases treated in 1930 was 113, and these received a total of 2,169 treatments.

Most of the cases benefited very much by the treatment.

The treatment is given by Miss M. L. Bruckshaw, C.S.M.M.G., who is a part-time employee of the Public Health Department.

Artificial Sunlight Clinic.

This clinic, of which the Medical Officer is Dr. Mary Boullen, and the operator Miss Charnock, C.S.M.M.G., meets three times a week at the premises of the School for Mothers in St. George's Road.

The total number of patients treated at the clinic in 1930 was 63 compared with 50 in 1929. These 63 patients received 1,318 treatments.

I give below Dr. Mary Boullen's report on the clinic for 1930. The clinic continues to do good work and justifies its existence. Its results correspond with those obtained elsewhere. The claims made for artificial sunlight treatment when it was first used as a therapeutic agent are now known to have been greatly exaggerated, although these claims are still put forward by persons engaged in the commercial exploitation of the treatment.

Dr. Mary Boullen's Report.

As in previous years the patients treated at the artifical sunlight clinic have been infants and children below the age of five and even a larger proportion of these than in previous years have been children suffering from rickets in its various types and stages.

In an endeavour to avoid the return of relapsed cases to the clinic after they had been discharged for only a few weeks, longer courses of treatment were given in 1929 with gradually increasing doses. This was not found to be altogether satisfactory, especially in estimating results, as many of the mothers tired of bringing their children and failed to complete the full course of treatment. This arrangement also meant that fewer individual cases could be treated as the accommodation is limited.

In 1930 it was decided to risk return cases and to give shorter courses of treatment with more rapidly increasing doses, the dosage beginning with an exposure of three minutes and ending with one of thirty minutes. The results of this method have been much more satisfactory.

One advantage has been that more cases have been treated—sixty-three instead of fifty in the previous year.

Another improvement has been that more cases have completed the course of treatment, and it has thus been possible to make a final examination of the children before discharging them, and to give a satisfactory report on their condition at the end of treatment.

Thirty-four cases of rickets were treated in 1930, compared with twenty cases in the previous year. Of these, thirteen continued to attend until they were discharged, a much more satisfactory state of things than before.

All these cases of rickets had cod liver oil and malt, but only two had massage. All these cases showed marked improvement, especially of the bony deformities, though five did not show satisfactory gain in weight.

It was found that the majority of the mothers found it impossible to spare the time to attend the artificial sunlight clinic and the massage clinic concurrently. These cases, after completing the course, were transferred for a course of massage.

The cases of primary malnutrition and debility attended badly, and of the three cases who completed the course, one showed no improvement, one improved slightly, and one showed great improvement.

The cases of debility following measles, pneumonia, and whooping cough did very well, as in previous years, and attended very regularly, all the cases who completed the course making good progress.

Only one case of marasmus was treated, and was discharged in good health.

No cases of enlarged cervical glands were treated, the condition being rare amongst the children attending the infant clinics.

Five cases of anæmia were treated. One was discharged much improved, three ceased attending, and one was discharged after a short time, as it was attending an eye hospital for a chronic eye disease.

The results of the clinic correspond fairly closely with those of the previous years.

The cases of rickets received the most benefit, and attended the most regularly.

The children convalescing from the various diseases of childhood were the next most satisfactory class.

Many of the children who were most in need of treatment could not receive it. In many cases they were children of large families, and the mothers in these cases could not spare the time to attend with their babies three mornings in the week.

On the whole, however, the attendances have been improving, the mothers making an effort to visit the clinic regularly after having the importance of this explained to them.

HASLAM MATERNITY HOME.

376 cases were admitted during 1930 as compared with 382 in 1929.

But these figures need some comment.

We had so many applications from Bolton residents during 1930 that we were compelled to cease admitting patients from outside Bolton, and we were eventually compelled to refuse some Bolton residents, as the pressure of the work was too much for the staff which can be accommodated on the premises.

I desire to thank our excellent matron, Miss Evans, for the untiring skill and energy she gives to the service of the home.

I have been greatly helped by the very valuable assistance given by Dr. Mary E. Boullen in the general supervision of the home.

I am pleased to be able once more to thank the staff generally for its willing and loyal co-operation in the work of the home.

There is no fixed scale of fees for the patients. The fee for each patient is what that patient may reasonably be expected to pay. No patient was refused admission in 1930 on account of the fee to be paid.

I append full particulars of all cases admitted to the home in 1930.

STATISTICS 1930.

1.	No. of beds in the Home		18
2.	No. of cases admitted		376
3.	Average duration of stay in days		13·7
4.	No. of cases delivered by—		
	(*a*) Midwives		329
	(*b*) Doctors		40
5.	No. of cases in which medical assistance was sought by the midwife		81
	(*a*) Ante-natal	19	
	(*b*) During labour	32	
	(*c*) After labour	10	
	(*d*) For Infant	20	
6.	No. of cases notified as—		
	(*a*) Puerperal fever	Nil	
	(*b*)*Puerperal pyrexia	3	
	*i.e. rise of temperature to 100·4°F for 24 hours, or its recurrence within that period.		
7.	No. of cases of pemphigus neonatorum		Nil
8.	No. of infants not entirely breast fed whilst in the home ...		11
9.	No. of cases notified as ophthalmia neonatorum, with result of treatment in each case		1
	(Satisfactory—Eyes normal)		
10.	No. of maternal deaths, with causes (Heart Disease)... ...		1

11.	No. of fœtal deaths (stillborn or within 10 days of birth) and their causes, and the results of the post-mortem examinations, if obtainable			17
	(*a*) Stillbirths			14
	Hydrocephalic and macerated		1	
	The liquor amnii green and offensive ...		3	
	Macerated		3	
	Difficult and prolonged labour		2	
	Anencephalic		2	
	Mother positive Wassermann		1	
	Mother had albumen		1	
	Spina bifida and hydrocephalic		1	
	(*b*) Deaths within 10 days of birth			3
	Weakly premature baby		2	
	Atelectasis		1	

Bolton Day Nursery,

1930 was a very difficult year for the Bolton Day Nursery. The heavy incidence of unemployment reduced the number of children for whom the hospitality of the Day Nursery is a real blessing when those on whom the care of the children naturally falls during the daytime are compelled to go out to work. Many cases, too, very suitable for admission to the nursery had to be dealt with in some much less satisfactory manner because of the poverty of the parents or guardians. During the year it was decided to reduce the children's fees from 1/- to 6d. per day owing to the attendance having fallen to such a low figure as seven. This reduction of fees, coupled with removal to very suitable premises in Arkwright Street, has had a most excellent result. The attendance at the present time (July, 1931) averages twenty a day, the children being most suitable cases for admission to the nursery. Great credit is due to those most closely connected with the nursery for their courage and success in dealing with a difficult crisis.

Below are set forth full particulars of the attendances at the Day Nursery during 1930.

STATISTICS FOR THE YEAR ENDED 31ST DECEMBER, 1930.

A.	NUMBER OF PLACES FOR CHILDREN UNDER 5 YEARS OF AGE (i.e. the total number of children that can be accommodated at any one time)	Nuttall House provided accommodation for 30 children. The number that can be accommodated at the New Nursery has not been decided upon.

B. Total Number of Attendances of Children :

Whole day under 3 years	2,904
Whole day 3 years and over	159
Total whole day	3,063
Half day under 3 years...	511
Half day 3 years and over	58
Total half day...	569

Number of attendances of children under 5 years :	
Whole day	3,063
Half day	569
Average for the year—whole day... ...	12·3
half day	12·3
Number of days open during year ... ... whole day...	248
half day ...	46
Actual number of children who have attended	81
Average number of attendances per child	44·8

CONTROL OF MIDWIVES.

During 1930 the number of midwives who notified their intention to practise in Bolton was 73. Of them, six were resident members of the staff of the Haslam Maternity Home.

The following table gives details of the Midwives' work :—

	Trained.	Untrained.	Total.
No. of midwives...	69	4	73
No. of cases attended	1,988	25	2,013
Av. no. of cases per midwife ...	28	6	27
No. of calls for medical aid ...	475	5	480
Per cent of cases in which medical aid was sought	23%	20%	23%
No. on the Register at the beginning of the year ...			70
No. who ceased to practise in Bolton			2
No. who notified their intention to practise in Bolton for the first time			3
No. on the Register at the end of the year			71
Names voluntarily removed from Roll			—

In addition to the above, the midwives attended 261 cases as maternity nurses.

The following 578 notifications were received from midwives in accordance with the regulations of the Central Midwives Board:—

Medical assistance 480

Conditions for which Doctors were Summoned in an Emergency by Midwives.

Pregnancy		42
Abortion or threatened abortion	14	
Ante-partum hæmorrhage	7	
Excessive sickness	1	
Varicose veins	2	
Albuminuria	11	
Heart disease	5	
Other conditions	2	
Labour		285
Delayed, complicated or obstructed labour	142	
Ruptured perineum	82	
Malpresentation	25	
Retained placenta	16	
Excessive bleeding	6	
Weakness	3	
Eclampsia	6	
Heart disease	2	
Other conditions	3	
Puerperium		37
Rise of temperature	21	
Offensive lochia	3	
Thrombosis	4	
Post-partum hæmorrhage	1	
Heart disease	1	
Other conditions	7	
Infants		116
Feebleness, etc.	33	
Inflammation of eyes	31	
Premature	12	
Malformation	11	
Spina bifida	9	
Pemphigus	1	
Melæna	4	
Jaundice	2	
Convulsions	2	
Prolapse of cord	1	
Heart disease	1	
Circumcision	1	
Other conditions	8	
		480

Notifications received from midwives regarding matters other than the summoning of medical aid :

Stillbirths	83
Artificial feeding	11
Death of mother or child	—
Laying out of dead body	4
Liability to be a source of infection	—

2,013 cases out of a total of 2,514 births registered were attended by midwives.

The Local Authority neither employs nor subsidises any practising midwives.

The midwives of Bolton are as competent and as anxious to do their best as the midwives of any other town. The faults I have to find are these :

(*a*) There are too many of them.
(*b*) They are very inadequately paid.

Can any remedy be found other than a State midwifery service ?

Lectures to Midwives.

During the 1929 portion of the winter 1929-30 five lectures were given to midwives. During the 1930 portion of the winter it was deemed advisable not to have any on account of the existence in Bolton and surrounding area of cases of smallpox.

MATERNITY AND NURSING HOMES.

Nursing Homes Registration Act, 1927.

1st July, 1928—31st December, 1930.

	Maternity Homes and Nursing Homes	Maternity Homes only	Nursing Homes only
No. of Homes on the register when the Act came into operation ...	—	3	—
No. of applications for registration	3	1	2
No. of Homes registered	3	1	2
No. of Homes on the register on 31st December, 1930	2	3	1

No orders have been made refusing or cancelling registration.

No applications have been made for exemption from registration.

Since the Act became operative three homes have been closed voluntarily and the registration cancelled.

The six homes on the register at the end of the year provided accommodation for patients as follows :—

Maternity patients...	11
Other patients	34

Bye-laws made under the Act of 1927 were approved and adopted by the Council on the 5th February, 1930.

Children Act, 1908.

As from the 1st April, 1930, the functions under Part I of the Children Act, 1908, formerly discharged by the Bolton Poor Law Authority, have been discharged by the Public Health Committee.

All our Health Visitors have been appointed Infant Protection Visitors, and the duties which they have to carry out completely harmonise with their work as health visitors.

One of the chief provisions of the law relating to infant life protection is that every person who undertakes for payment the nursing and maintenance of any child under the age of seven apart from its parents for more than 48 hours must at once give notice to the Local Authority.

Records of 28 children who were being nursed for gain were handed over to this Department by the Board of Guardians.

During the period, 1st April to 31st December, 1930, the names of five children were added to the register, and seven were removed for the following reasons :—

3 reached the age of seven years.
2 were removed from Bolton.
1 was adopted.
1 was returned to parents.

All these cases are frequently visited by the Health Visitors in order to satisfy themselves that the children are being properly cared for.

SECTION X.

Miscellaneous.

Queen's Park Observatory, Bolton.

Meteorological Summary, 1930.

With the exception of February the barometric pressure was, each month, below the averages of the last 44 years. The yearly mean, 29·875" was lower than any records since 1887. The extremes were 30·780" on February 9th, and 28·786" on September 20th.

The mean temperature for the year, 47·89° was ·72° above normal. It exceeded the average excepting in the months of February, March, May and December. The shade temperature reached 88·8° on August 27th, during a phenomenally hot period from the 26th to the 30th, this reading being a record for Bolton. The lowest shade temperature was 20·0° on March 20th. The year's average for the black bulb (sun heat) was 69·9°, considerably below any previous records for this factor. Temperatures on and at various depths in the ground were above normal.

Sunshine was recorded on 263 days (average 254). The amount, 1025·0, hours, was 36 hours above normal. 14·1 hours were registered on June 15th.

Rainfall was much in excess in January, July, August, October and November, whereas the fall for February, ·35", was the lowest recorded since 1858. The year's total 52·878" was 8·565" above the average (1887-1930). Rain fell on 225 days, the duration being 919·2 hours, or 66·6 hours above normal. The maximum fall in one day was 1·46" on August 6th.

Due to their preponderance from February to June, Northerly and Easterly winds exceeded those from the usually prevalent Westerly and South-Westerly quarter. Winds were distinctly North-Easterly during 1512 hours. Wind velocity was generally light, the average daily movement being 124 miles, the lowest record since 1887. The strongest gusts registered were at 35 miles per hour during the night of January 1st.

THOS. MIDGLEY, F.R.Met.S.

Meteorological Summary for 1930.

1930	Mean Pressure of Barometer at Sea Level	Mean Relative Humidity	Mean of Maximum and Minimum Temperature	Absolute extremes of Temperature.				Sunshine.			Total Rainfall
				Highest	Date	Lowest	Date	Total Amount	Maximum in one day	Date	
								hours	hours		ins.
January	29·699"	88·9%	40·80°	55·7°	19	28·1°	28	29·5	4·7	15	6·151"
February	30·166	80·9	36·53	53·4	28	22·7	21	45·9	7·9	16	·350
March	29·853	82·7	40·02	53·5	8	20·0	20	65·0	6·9	23	3·363
April	29·636	75·8	45·53	64·1	25	32·0	22	76·5	12·7	29	2·398
May	29·958	70·4	49·94	68·2	27	30·7	10	143·0	12·2	1	2·201
June	30·006	70·9	57·64	78·2	6	42·8	3	187·9	14·1	15	2·792
July	29·866	80·1	57·64	72·9	1	48·3	7	119·6	11·2	11	6·183
August	29·886	81·0	58·34	88·8	27	44·6	6	137·1	11·5	16 & 27	7·836
September	29·920	82·8	55·67	70·6	25	44·7	2	89·9	9·6	3	3·772
October	29·798	79·6	50·09	63·8	15	34·7	27	79·4	7·7	9	6·565
November	29·857	83·9	43·09	54·7	9	25·4	17	42·4	7·3	4	6·407
December	29·857	92·0	39·44	51·4	18	29·0	9	8·8	5·0	21	4·860
Total	358·502	969·0	574·73					1025·0			52·878
Averages	29·875	80·7	47·89					85·4			4·406

Baths and Wash-houses. 12 months ended 31st March, 1931.

	Mixed Bathing	Swimming Baths			Slipper Baths		Needle Baths	Vapour Baths	Contracts	Total Bathers	Corresponding period last year	No using Wash-houses	Corresponding period last year
	6d.	4d.	3d.	2d.	8d.	6d.	9d.	9d.					
Moss St. Baths & Wash-houses...	6420	34742	3562	41369	2661	9407	...	...	51034	149195	130872	23812	22690
Bridgman St. Baths ...	6226	18108	1423	20866	3887	3416	...	293	25147	79366	80993	...	...
High St. Baths	4262	16298	1604	22688	1335	5049	16	159	33297	84708	71313	...	...
Total ..	16908	69148	6589	84923	7883	17872	16	452	109478	313269	283178	23812	22690

Turkish Baths. 12 months ended 31st March, 1931.

	Turkish Baths		Slipper Baths		Massage	Medicated Baths	Total Bathers	Corresponding period last year
	1st Class	2nd Class	1st Class	2nd Class				
Turkish Baths	2233	1807	262	345	241	31	4919	5345

Corporation Horses.

Report on the Inspection and Treatment of Horses belonging to the Corporation.

The following statement shows the total number of Corporation horses on the 31st December, 1930, the Committees to which they belong, and the total visits of inspection for the purpose of treatment of horses for various ailments during the year.

Committee	Number of Horses	Visits of Inspection during 1930
Cleansing and Sewage	47	69
Streets	1	19
Gas	2	5
Parks	1	5
Cemetery	2	10
Waterworks	2	13
Education	3	14
Total	58	135

During the year three horses were submitted for veterinary examination prior to consideration of purchase by the Cleansing and Sewage and Waterworks committees.

THE FOLLOWING CIRCULAR LETTERS, ETC. WERE SENT OUT DURING 1930.

28/3/30 — 78 letters to local fishmongers asking for their co-operation with the Public Health Department in protecting the public of Bolton against any danger from mussels unfit for human consumption.

8/5/30 — 70 letters to all practising midwives in Bolton enclosing a copy of instructions regarding antiseptics in connexion with confinements.

25/9/30 — 126 copies of Pamphlet 129/T.A. issued by the Ministry of Agriculture and Fisheries, to local farmers describing the characteristic symptoms of foot and mouth disease, the methods of its spread, and the action and precautions to be taken when this disease is suspected or known to exist.

25/9/30 — 126 leaflets setting out the provisions of the Transit of Animals (Amendment Order) 1930, sent to local farmers, butchers, traders, and others engaged in the transport of animals.

27/10/30 — 300 letters to farmers, corn and provision merchants, etc., calling attention to, and giving advice, regarding Rat Week.

6/11/30 — 71 letters to Bolton doctors asking for information regarding all persons under the age of 16 years who are suffering from infirmities which justify their being classified as orthopædic cases.

15/12/30 — 70 copies of the Public Health (Tuberculosis) Regulations, dated the 8th July, 1930, issued by the Ministry of Health, to all local medical practitioners.

24/12/30 — 71 letters to Bolton doctors asking for information regarding cases suffering from sequelæ of encephalitis lethargica which have never been notified.

SECTION XI.

Appendix.

List No.	CAUSES OF DEATH.	Total	SEX.		AGE.													
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50
	General Diseases.																	
1	Enteric fever	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	(*a*) Typhoid fever	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	(*b*) Paratyphoid fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Relapsing fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Mediterranean fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Measles	4	3	1	...	1	1	...	...	2	...	...	...	...	...	...	...	...
8	Scarlet fever	3	2	1	...	...	1	...	...	1	...	...	1	...	...	...	...	...
9	Whooping cough	8	2	6	3	1	2	...	1	1	...	...	...	...	...	...	...	...
10	Diphtheria	3	2	1	...	...	1	1	1	...	...	...	...	...	...	...	...	...
11	Influenza	42	25	17	...	...	1	...	...	...	...	1	2	1	4	3	5	4
	(*a*) 1. With pneumonic complications	19	12	7	...	...	...	...	...	...	...	1	2	1	1	2	4	2
	(*a*) 2. With other pulmonary complications	6	2	4	...	...	...	...	...	...	...	...	...	...	2	1	...	1
	(*b*) 1. With non-pulmonary complications	10	5	5	...	...	1	...	...	...	...	...	...	...	1	...	1	1
	(*b*) 2. Without stated complications	7	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Miliary fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Mumps	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Asiatic cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Cholera nostras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Yellow fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Spirochætosis ictero-hæmorrhagica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Leprosy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Erysipelas	14	7	7	1	...	...	...	...	...	...	1	...	...	...	...	...	1
22	Acute poliomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(1) Poliomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Polioencephalitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	Encephalitis lethargica	4	1	3	...	...	...	...	...	1	...	...	...	1	1	...	...	1
24	Meningococcal meningitis	2	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...
25	Other epidemic diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	Glanders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	Anthrax	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	Rabies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Tetanus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Mycoses	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(1) Actinomycosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Other Mycosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31-37	Tuberculosis (all forms)	150	78	72	1	5	1	1	2	5	2	16	19	11	17	15	10	9
31	Respiratory system	114	60	54	...	1	...	...	...	1	...	11	16	9	16	15	10	8
32	Nervous system	8	3	5	1	3	...	...	...	2	1	1	...	...	...	...	...	...
33	Intestines and peritoneum	11	6	5	...	...	...	1	1	1	...	4	...	...	...	...	...	...
34	Vertebral column	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
35	Joints	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36	Other Organs	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(*a*) Skin & subcutaneous tissue	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(*b*) Bones (vertebral column excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(*c*) Lymphatic system (abdominal glands excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(*d*) Genito—urinary system	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(*e*) Others in 36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37	Disseminated tuberculosis	12	6	6	...	1	1	...	1	1	1	...	3	2	...	...	...	1
	(*a*) Acute	5	2	3	...	...	...	...	1	...	1	...	2	...	...	...	...	...
	(*b*) Chronic or unstated	7	4	3	...	1	1	...	...	1	...	...	1	2	...	...	...	1
38	Syphilis	6	4	2	2	...	...	...	...	...	...	...	...	...	...	1	...	...
39	Soft chancre	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Gonococcal infection	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41	Purulent infection, septicæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar.Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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2	2	7	1	4	1	1	1	41	2	2	4	2	1	3	5	...	2	11	...	1	3	3	...	2	1
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11	6	3	...	1	...	1	10	140	5	15	22	8	4	16	5	9	3	25	3	3	5	12	3	4	8
6	6	2	...	1	...	...	1	113	3	12	16	7	3	12	5	6	2	19	3	2	4	8	2	3	7
...	...	...	...	...	...	...	4	4	1	...	2	1	...	...	...	...	...	3	...	...	...	1	...	...	...
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List No.	CAUSES OF DEATH.	Total	SEX.		AGE.													
			M	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	4 to 5
42	Other infectious diseases... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
1-42	Epidemic, Endemic and Infectious Diseases	238	127	111	8	8	7	2	4	10	2	18	22	13	22	19	16	1
43-49	Cancer, Malignant disease ...	240	107	133	...	...	...	...	...	...	...	...	1	...	1	9	4	1
43	Buccal cavity	15	14	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..
44	Pharynx, œsophagus, stomach, liver and annexa	76	39	37	...	...	...	...	...	...	...	...	...	...	...	4	...	
45	Peritoneum, intestines and rectum	47	23	24	...	...	...	...	...	...	...	...	...	...	...	...	1	
46	Female genital organs	28	...	28	...	...	...	...	...	...	...	...	...	...	...	2	2	
47	Breast	30	...	30	...	...	...	...	...	...	...	...	...	...	...	2	...	
48	Skin	4	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..
49	Other or unspecified organs ...	40	27	13	...	...	...	...	...	...	...	...	1	...	...	1	1	
50	Tumours, not returned as malignant (brain and female genital organs excepted) ..	6	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	
51	Rheumatic fever	23	6	17	...	...	...	...	...	3	3	...	...	2	...	1	3	
52	Chronic rheumatism, osteo-arthritis, gout	12	5	7	...	...	...	...	...	...	...	...	...	...	...	...	...	
	1. Chronic rheumatism, chronic arthritis	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	2. Rheumatoid and osteo-arthritis	11	5	6	...	...	...	...	...	...	...	...	...	...	...	...	...	
	3. Gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
53	Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
54	Pellagra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
55	Beri-beri	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
56	Rickets	4	3	1	1	2	...	1	...	...	...	...	...	...	...	...	...	..
57	Diabetes	30	15	15	...	...	...	...	...	...	...	...	2	...	...	1	1	..
58	Anæmia, chlorosis	21	11	10	...	1	...	...	...	...	...	...	...	4	1	1	1	..
	(a) Pernicious anæmia... ...	19	10	9	...	...	...	...	...	...	...	...	...	3	1	1	1	..
	(b) Other anæmias and chlorosis	2	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	..
59	Diseases of the pituitary gland ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
60	Diseases of the thyroid gland ...	4	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	..
	(a) Exophthalmic goitre ..	4	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	..
	(b) 1. Myxœdema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	(b) 2. Cretinism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	(b) 3. Other diseases of the thyroid gland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
61	Diseases of the parathyroid glands	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	1. Tetany	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	..
	2. Other diseases of the parathyroid glands ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
62	Diseases of the thymus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
63	Diseases of the adrenals	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
64	Diseases of the spleen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
65	Leukæmia, lymphadenoma ...	7	3	4	...	...	...	...	...	...	2	...	1	...	...	...	1	..
	(a) Leukæmia	4	2	2	...	...	...	...	...	...	2	...	1	...	...	...	...	..
	(b) Lymphadenoma (Hodgkin's disease)	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	1	..
66	Alcoholism (acute or chronic) ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
67	Chronic poisoning by mineral substances	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
	1. Occupational lead poisoning	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	..
	2. Other chronic poisoning by mineral substances	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
68	Chronic poisoning by organic substances	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
69	Other general diseases	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	..
	1. Purpura	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	..
	2. Hæmophilia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	3. Other diseases included under 69	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	Total General Diseases ..	589	281	308	9	11	7	3	4	13	7	18	26	19	24	32	28	32

I.—*Continued.*

DEATH, 1930.

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar.Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	9	14	2	7	1	2	29	209	8	18	30	13	8	27	14	15	5	42	3	4	9	20	4	7	11
40	47	36	30	25	7	2	...	240	5	13	39	11	5	24	10	22	5	24	7	7	13	22	6	17	10
3	7	2	1	1	...	...	...	15	1	4	1	...	2	1	2	...	...	1	...	1	...	...	1	1	...
13	9	18	11	9	1	1	...	76	2	3	13	5	...	7	2	6	2	10	3	1	3	7	1	6	5
9	13	5	7	7	2	...	...	47	...	1	10	3	2	6	2	5	2	2	2	...	1	2	2	5	2
5	4	1	3	...	1	...	...	28	...	1	3	1	1	6	2	1	...	4	...	2	3	2	1	...	1
2	9	1	5	3	1	...	...	30	2	...	1	2	...	...	1	4	...	4	...	2	2	8	...	3	1
...	...	...	1	1	...	1	...	4	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	1
8	5	9	2	4	2	...	...	40	...	4	10	...	...	4	1	6	...	3	1	1	4	3	1	2	...
...	1	1	2	...	...	...	...	6	...	1	...	...	...	...	...	...	...	1	1	...	1	1	...	...	1
1	2	1	1	...	...	...	...	23	...	...	4	2	...	2	...	3	...	1	1	...	4	4	1	...	1
...	1	2	3	1	2	...	...	12	1	...	1	1	1	1	1	...	...	...	1	...	1	2	1	1	...
...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
...	...	2	3	1	2	...	...	11	1	...	1	1	1	1	1	...	...	...	1	...	1	1	1	1	...
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TABLE

CAUSES OF

List No.	CAUSES OF DEATH.	Total	SEX.		AGE.													
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 5
	Diseases of the Nervous System and Sense Organs.																	
70	Encephalitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	1. Cerebral abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	2. Other diseases included under 70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
71	Meningitis	10	6	4	1	1	...	...	1	3	...	...	1	...	1	...	1	
72	Tabes dorsalis (locomotor ataxy)	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
73	Other diseases of the spinal cord	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
74	Cerebral hæmorrhage, apoplexy etc	116	57	59	...	...	...	...	...	...	...	...	...	1	1	...	3	
(a)	1. Cerebral hæmorrhage, so returned	93	46	47	...	...	...	...	...	...	...	...	...	1	1	...	2	
	2. Apoplexy, lesion unstated	5	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	
(b)	1. Cerebral embolism... ...	4	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	
	2. Cerebral thrombosis ..	14	6	8	...	...	...	...	...	...	...	...	...	...	...	...	1	
75	Paralysis of unstated origin ...	2	1	1	...	...	...	...	...	...	...	...	...	..	...	...	...	
	(a) Hemiplegia	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(b) Other forms of paralysis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
76	General paralysis of the insane ...	5	3	2	...	...	...	...	...	...	...	...	...	...	1	1	...	
77	Other forms of insanity	6	3	3	...	...	...	...	...	...	...	...	...	1	...	...	...	
78	Epilepsy	8	4	4	...	...	...	1	...	...	1	1	...	...	1	...	...	
79	Convulsions (non-puerperal 5 years and over)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
80	Infantile Convulsions (under 5 years of age)...	9	4	5	5	3	1	...	...	...	...	...	...	...	...	...	...	
81	Chorea	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	
82	Hysteria and neuritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(1) Hysteria and neuralgia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Neuritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
83	Cerebral softening...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	
84	Other diseases of the nervous system	17	9	8	...	...	...	...	...	...	...	1	2	1	1	3	1	
	(1) Idiocy, imbecility ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Cerebral tumour	5	3	2	...	...	...	...	...	...	...	...	1	...	...	2	...	
	(3) Disseminated sclerosis ...	3	...	3	...	...	...	...	...	...	...	...	...	...	1	...	1	
	(4) Paralysis agitans	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(5) Other diseases included under 84	6	5	1	...	...	...	...	...	...	...	1	1	1	...	1	...	
85	Diseases of the eye and annexa...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
86	Diseases of the ear and of the mastoid sinus	10	7	3	...	1	1	...	...	1	1	...	1	1	1	1	1	
	(1) Diseases of the mastoid sinus	3	2	1	...	1	...	...	...	1	...	...	1	...	...	...	...	
	(2) Diseases of the ear... ...	7	5	2	...	...	1	...	...	...	1	...	...	1	1	1	1	
	Total Diseases of the Nervous System and Sense Organs ...	187	96	91	6	5	2	1	1	4	2	2	5	4	6	5	6	
	Diseases of the Circulatory System.																	
87-90	Heart diseases	366	162	204	...	...	...	...	...	2	2	2	3	5	7	7	10	1
87	Pericarditis	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
88	Acute endocarditis and myocarditis	11	7	4	...	...	...	...	...	1	...	1	...	2	2	2	2	
	(1) Malignant endocarditis ...	6	5	1	...	...	...	...	...	1	...	1	...	2	...	1	...	
	(2) Other acute endocarditis ..	3	1	2	...	...	...	...	..	...	...	...	...	...	1	1	1	
	(3) Acute myocarditis	2	1	1	...	...	...	...	...	...	...	...	...	...	1	...	1	
89	Angina pectoris	30	17	13	...	...	...	...	...	...	...	...	...	...	2	1	...	
90	Other diseases of the heart ...	324	137	187	...	...	...	...	...	1	2	1	3	3	4	4	8	1
	(1) Aortic valve disease ...	7	3	4	...	...	...	...	...	...	...	...	...	...	...	...	1	
	(2) Mitral valve disease ...	60	20	40	...	...	...	...	...	1	...	1	3	3	1	1	5	
	(3) Aortic and mitral valve disease	3	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...	
	(4) Other or unspecified valve disease	53	25	28	...	...	...	...	...	...	1	...	...	...	2	2	1	
	(5) Fatty heart	11	5	6	...	...	...	...	...	...	...	...	...	...	1	...	...	
	(6) Cardiac dilatation, cause unspecified	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
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7	18	21	26	16	10	4	...	116	2	2	16	12	5	6	4	9	4	15	4	4	6	9	1	9	8
7	16	17	17	13	8	4	...	93	2	2	13	10	5	4	1	8	4	14	4	3	3	7	1	6	6
...	1	1	3	...	...	...	...	5	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...	1	...
...	1	1	2	...	...	...	...	4	...	...	1	...	...	...	...	1	...	...	...	...	...	2	...	...	...
...	...	2	4	3	2	...	...	14	...	...	1	1	...	2	1	...	...	1	...	1	3	...	...	2	2
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9	22	28	29	16	12	4	15	172	6	4	27	19	7	14	7	9	6	25	10	6	11	15	1	10	10
34	58	60	58	45	13	13	...	366	4	22	52	27	7	36	17	36	7	40	14	11	12	38	13	18	12
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2	4	7	4	3	1	...	...	30	...	1	5	1	1	3	1	...	1	3	...	3	1	4	2	1	3
32	54	52	54	42	12	13	...	324	4	20	45	24	6	32	16	35	5	37	14	7	11	33	11	15	9
1	...	1	2	...	...	1	...	7	...	...	1	...	1	...	...	3	...	1	...	...	...	...	...	...	1
5	9	5	11	2	1	1	...	60	1	3	8	7	1	5	3	9	1	3	4	2	3	7	...	2	1
...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...
9	11	6	6	5	1	...	..	53	2	2	12	2	...	4	2	5	...	9	1	1	1	7	2	2	1
...	5	2	1	...	...	...	...	11	...	...	1	2	...	1	1	1	...	...	2	...	1	1	...	1	...
...	...	1	...	1	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1

List No.	CAUSES OF DEATH.	Total	SEX. M.	SEX. F.	AGE. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 5
90	Other diseases of the heart—*contd.*																	
	(7) Other or unspecified myocardial disease	169	73	96	...	...	...	...	...	...	...	...	...	...	...	...	1	
	(8) Disordered action of the heart	11	4	7	...	...	...	...	...	...	...	...	...	...	...	1	...	
	(9) Heart disease (undefined)...	8	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	
91	Diseases of the arteries	213	104	109	...	...	...	...	...	...	...	...	...	1	...	...	1	
	(*a*) Aneurysm	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(*b*) Arterio-sclerosis	210	101	109	...	...	...	...	...	...	...	...	...	1	...	...	1	
	(1) With record of cerebral vascular lesion	94	54	40	...	...	...	...	...	...	...	...	...	1	...	...	1	
	(2) Without record of cerebral vascular lesion ...	116	47	69	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(*c*) Other diseases of the arteries	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
92	Embolism and thrombosis (not cerebral)	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
93	Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.) ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	
94	Diseases of the lymphatic system (lymphangitis, etc.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
95	Hæmorrhage without stated cause	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
96	Other diseases of the circulatory system	8	2	6	...	...	...	...	...	...	...	...	...	...	...	...	1	
	Total Diseases of the Circulatory System	589	269	320	...	...	...	...	...	2	2	2	3	6	7	7	13	1
	Diseases of the Respiratory System.																	
97	Diseases of the nasal fossæ and annexa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(1) Diseases of the nose	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Diseases of the accessory nasal sinuses	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
98	Diseases of the larynx	4	2	2	1	3	...	...	...	...	...	...	...	...	...	...	...	
	(1) Laryngismus stridulus ...	2	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	
	(2) Laryngitis	2	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	
	(3) Other diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
99	Bronchitis	138	53	85	7	1	1	...	...	1	...	1	...	1	...	2	1	
	(*a*) Acute...	50	18	32	4	...	1	...	...	...	...	1	...	1	...	1	...	
	(*b*) Chronic	50	24	26	...	...	...	...	...	...	...	...	...	...	...	1	1	
	(*c*) Not distinguished as acute or chronic	38	11	27	3	1	...	...	...	1	...	...	...	...	...	...	...	
100, 101	Pneumonia (all forms)	133	77	56	19	6	3	3	5	4	2	2	1	...	7	3	5	
100	Broncho-pneumonia	67	43	24	17	6	2	3	3	2	2	...	...	...	...	1	1	
101	Pneumonia (lobar or not otherwise defined)	66	34	32	2	...	1	...	2	2	...	2	1	...	7	2	4	
	(*a*) Lobar	49	26	23	1	...	1	...	1	2	...	2	1	...	6	2	2	
	(*b*) Not otherwise defined ...	17	8	9	1	...	...	...	1	...	...	...	...	...	1	...	2	
102	Pleurisy	4	2	2	...	...	...	...	...	...	...	...	...	...	...	1	...	
	(1) Empyema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Other pleurisy	4	2	2	...	...	...	...	...	...	...	...	...	...	...	1	...	
103	Congestion and hæmorrhagic infarct of lung	4	2	2	...	...	...	...	1	...	...	...	...	...	...	...	...	
104	Gangrene of the lung	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
105	Asthma	10	4	6	...	...	...	...	...	...	...	...	...	2	...	1	...	
106	Pulmonary emphysema	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
107	Other diseases of the respiratory system	3	3	...	...	...	...	...	...	...	...	...	1	...	...	...	1	
	(*a*) Chronic interstitial pneumonia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(*b*) Diseases of the mediastinum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(*c*) Other diseases included under 107	3	3	...	...	...	...	...	...	...	...	...	1	...	...	...	1	
	Total Diseases of the Respiratory System	298	145	153	27	10	4	3	6	5	2	3	2	3	7	7	8	15

—*Continued.*

EATH, 1930.

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar.Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
16	25	34	32	31	10	9	...	169	1	14	22	10	4	22	7	16	3	21	7	3	5	15	8	7	4
...	2	3	2	...	...	1	...	11	...	...	1	1	...	...	...	...	...	3	...	...	1	1	...	3	1
1	2	...	...	3	...	1	...	8	...	1	...	2	...	...	2	...	1	...	...	...	...	1	1	...	...
15	26	34	59	40	19	12	...	213	4	15	25	20	6	17	10	18	6	19	11	2	14	20	6	12	8
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14	25	33	59	40	19	12	...	210	4	15	25	20	5	17	10	17	6	18	11	2	14	20	6	12	8
9	15	17	25	13	6	2	..	94	2	6	10	7	3	8	3	8	2	6	8	2	8	10	4	3	4
5	10	16	34	27	13	10	...	116	2	9	15	13	2	9	7	9	4	12	3	...	6	10	2	9	4
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51	85	95	119	85	33	25	.	589	8	37	78	47	13	53	30	56	13	59	25	13	26	59	19	32	21
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8	13	19	25	28	18	1	9	129	7	13	17	15	5	17	8	9	5	10	4	2	5	13	1	2	5
1	6	4	10	12	6	...	5	45	4	7	8	5	4	4	2	1	2	...	2	1	1	7	...	...	2
4	6	8	10	9	6	...	...	50	1	3	5	2	...	8	6	6	2	4	1	1	3	4	1	2	1
3	1	7	5	7	6	1	4	34	2	3	4	8	1	5	...	2	1	6	1	...	1	2	...	...	2
12	8	11	9	7	3	1	36	97	3	7	27	7	5	12	8	14	...	11	6	2	7	14	4	4	2
4	1	7	5	1	2	1	31	36	1	4	18	3	2	6	5	6	...	6	5	...	3	7	...	1	...
8	7	4	4	6	1	...	5	61	2	3	9	4	3	6	3	8	...	5	1	2	4	7	4	3	2
6	4	2	4	3	...	...	3	46	2	1	9	1	3	5	3	5	...	5	...	1	3	3	4	2	2
2	3	2	...	3	1	...	2	15	...	2	...	3	...	1	...	3	...	...	1	1	1	4	...	1	...
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2	1	1	1	...	...	...	...	10	..	...	3	...	...	2	...	..	...	1	...	...	3	...	...	1	...
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22	23	32	38	37	21	2	50	248	10	23	48	22	11	32	16	25	6	26	10	4	15	29	5	9	7

TABLE

CAUSES OF

List No.	CAUSES OF DEATH.	Total	SEX.		AGE.													
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	4 to 5
	Diseases of the Digestive System.																	
108	Diseases of the buccal cavity and annexa	3	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...
	(1) Diseases of the teeth and gums	2	1	1	2	...	...	...	...	..	...	...	...	...	...	...	...	...
	(2) Ludwig's angina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(3) Other diseases included under 108	1	1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
109	Diseases of the pharynx and tonsils	4	3	1	...	..	...	...	...	1	...	...	...	1	...	2	...	...
	(1) Tonsillitis, etc., adenoid vegetations	2	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
	(2) Other diseases included under 109	2	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...
110	Diseases of the œsophagus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
111	Ulcer of the stomach or duodenum	13	12	1	...	...	...	...	...	...	...	...	...	...	...	1	4	
	(*a*) Ulcer of the stomach ...	8	7	1	...	...	...	...	...	...	...	...	..	...	...	1	2	
	(*b*) Ulcer of the duodenum ...	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
112	Other diseases of the stomach	6	2	4	2	...	...	...	...	...	...	...	...	...	...	...	2	...
	(1) Inflammation of the stomach	4	1	3	2	...	...	...	...	...	...	...	...	...	...	...	1	...
	(2) Other diseases included under 112...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
113, 114	Diarrhœa and enteritis	34	12	22	25	2	...	...	...	...	...	...	...	...	...	1	1	...
	(1) Ulceration of the intestines.	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Colitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(3) Other diseases included under 113, 114	33	11	22	25	1	...	...	...	...	...	...	...	...	...	1	1	...
115	Ankylostomiasis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
116	Diseases due to other intestinal parasites	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
117	Appendicitis	9	4	5	...	...	...	...	...	...	2	...	1	...	1	...	...	
118	Hernia, intestinal obstruction ...	23	11	12	2	...	1	...	1	...	1	...	...	...	1	...	...	...
	(*a*) Hernia	13	5	8	..	...	1	...	...	...	...	...	...	...	...	...	...	...
	(*b*) Intestinal obstruction ...	10	6	4	2	...	...	...	1	...	1	...	...	...	1	...	...	...
119	Other diseases of the intestines..	5	4	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	(1) Intestinal stasis ·	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Other diseases included under 119	3	2	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
120	Acute yellow atrophy of the liver.	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
121	Hydatid tumour of the liver ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
122	Cirrhosis of the liver	9	6	3	...	...	...	...	...	...	...	...	...	...	...	2	...	
	(*a*) Returned as alcoholic ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(*b*) Not returned as alcoholic ...	9	6	3	...	...	...	...	...	...	...	...	...	...	...	2	...	
123	Biliary calculi	8	3	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...
124	Other diseases of the liver ...	10	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	
125	Diseases of the pancreas... ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
126	Peritonitis without stated cause...	2	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...
127	Other diseases of the digestive system	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
	Total Diseases of the Digestive System	127	64	63	31	2	1	...	1	2	3	...	1	1	2	7	8	
	Non-puerperal Diseases of the Genito-urinary System.																	
128	Acute nephritis (including unspecified under 10 years of age)	12	6	6	1	...	..	...	...	1	1	1	3	...	1	1	...	...
129	Chronic nephritis (including unspecified over 10 years of age)	100	52	48	...	...	...	...	...	...	1	1	1	1	2	3	1	
130	Chyluria	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
131	Other diseases of the kidney and annexa	4	...	4	...	...	...	...	...	..	...	...	...	...	1	1	...	
132	Calculi of the urinary passages	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
133	Diseases of the bladder	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(1) Cystitis	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Other diseases of the bladder	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar Lever-c-Br'himet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
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1	4	...	1	3	1	1	1	1	12	1	...	...	1	...	...	...	3	1	2	...	...	...	4	...	...	1
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9	13	12	8	9	7	3	3	35	92	5	7	17	11	5	8	1	11	3	12	4	3	4	22	4	3	7
1	1	...	...	1	...	...	...	1	11	...	...	1	1	...	2	1	...	2	2	...	...	1	1	...	1	...
5	12	20	20	19	8	3	1	...	100	5	5	21	4	2	6	5	8	5	10	5	2	2	8	2	3	7
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List No.	Causes of Death.	Total	SEX.		AGE.												
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45
134	Diseases of the urethra, urinary abscess, etc.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
135	Diseases of the prostate	16	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...
136	Non-venereal diseases of the male genital organs	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
137	Cysts and other tumours of the ovary not returned as malignant	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
138	Salpingitis and pelvic abscess in female	3	...	3	...	...	...	...	...	...	...	...	...	...	2	...	...
	(1) Salpingitis	2	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...
	(2) Pelvic abscess in female ...	1	...	1	...	...	...	..	...	.	...	...	...	...	...	...	...
139	Tumours of the uterus not returned as malignant	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
140	Non-puerperal uterine hæmorrhage	2	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...
141	Other diseases of the female genital organs	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2
	(1) Other diseases of the uterus	2	..	2	...	...	...	...	...	...	...	...	...	...	...	...	2
	(2) Diseases of the female genital organs not included under other headings ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
142	Non-puerperal diseases of the breast...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Non-puerperal Diseases of the Genito-urinary System	145	76	69	2	...	...	...	...	1	2	2	5	1	7	5	4
	The Puerperal State.																
143	Accidents of pregnancy	2	...	2	...	...	...	...	...	...	...	...	...	1	...	1	...
	a. Abortion	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
	b. Ectopic gestation	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	c. Other accidents	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
144	Puerperal hæmorrhage	1	...	1	...	...	...	...	...	...	...	...	...	..	...	...	1
145	Other accidents of childbirth ...	4	...	4	...	...	...	...	...	...	...	...	...	2	1	1	...
146	Puerperal sepsis	6	...	6	...	...	...	...	...	...	...	...	3	1	1	1	...
147	Puerperal phlegmasia alba dolens, embolism and sudden death	2	...	2	...	...	...	...	...	...	...	...	...	...	1	1	...
	(1) Puerperal phlegmasia alba dolens not returned as septic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Puerperal embolism and sudden death	2	...	2	...	...	...	...	...	...	...	...	...	...	1	1	...
148	Puerperal albuminuria and convulsions	2	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
149	Childbirth not assignable to other headings (puerperal insanity)	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
150	Puerperal diseases of the breast...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Diseases of the Puerperal State	17	...	17	...	...	...	...	...	...	...	...	3	4	3	6	1
	Diseases of the Skin and Cellular Tissue.																
151	Gangrene	5	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...
	(1) Senile gangrene	4	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Other gangrene	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
152	Carbuncle, boil	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
153	Cellulitis, acute abscess	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(1) Cellulitis	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Acute abscess	2	2	...	...	..	...	...	...	...	...	...	...	...	...	...	...

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
...	...	...	...	...	...	...	..	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
1	1	4	3	5	2	...	...	16	1	1	1	..	...	1	3	...	...	1	1	...	1	1	1	2	2
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16	21	24	23	13	6	1	2	143	6	6	27	7	2	9	9	9	8	15	6	4	4	13	3	7	10
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List No.	CAUSES OF DEATH.	Total	SEX. M.	SEX. F.	AGE. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	4 t 5
154	Other diseases of the skin and its annexa	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(1) Ulcer, bedsore	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Eczema	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	
	(3) Pemphigus	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	
	(4) Other diseases included under 154...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Total Diseases of the Skin and Cellular Tissue	11	6	5	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Diseases of the Bones and Organs of Locomotion.																	
155	Diseases of the bones	3	2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	
	(1) Acute infective osteomyelitis and periostitis ...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
	(2) Other diseases of the bones.	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	
156	Diseases of the joints	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
157	Amputations	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
158	Other diseases of the organs of locomotion	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Total Diseases of the Bones and Organs of Locomotion..	3	2	1	...	...	...	...	...	..	...	1	...	...	...	...	...	
159	**Malformations.**																	
	(1) Congenital hydrocephalus...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Congenital malformation of the heart	3	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	
	(3) Other congenital malformations	14	8	6	14	...	...	...	...	...	...	...	...	...	...	...	...	
	Total Malformations... ...	17	11	6	17	...	...	...	...	...	...	...	...	...	...	...	...	
	Diseases of Early Infancy.																	
160	Congenital debility, sclerema and icterus	17	12	5	17	...	...	...	...	...	...	...	...	..	...	...	...	
	(1) Congenital debility and sclerema	16	11	5	16	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Icterus neonatorum ...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
161	Premature birth, injury at birth...	55	33	22	55	...	...	...	...	...	...	...	...	...	...	...	...	
	(1) Premature birth	50	31	19	50	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Injury at birth	5	2	3	5	...	...	...	...	...	...	...	...	...	...	...	...	
162	Other diseases peculiar to early infancy	10	3	7	10	...	...	...	...	...	...	...	...	...	...	...	...	
	(1) Diseases of the umbilicus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Atelectasis	5	2	3	5	...	...	...	...	...	...	...	...	...	...	...	...	
	(3) Other diseases included under 162...	5	1	4	5	...	...	...	...	...	...	...	...	...	...	...	...	
163	Lack of care	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Total Diseases of Early Infancy	82	48	34	82	...	...	...	...	...	...	...	...	...	...	...	...	
	Old Age.																	
164	(1) Senile dementia	11	6	5	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(2) Other forms of senile decay.	79	48	31	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Total Deaths from Old Age...	90	54	36	...	..	...	...	...	...	...	...	...	...	...	...	...	

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
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...	...	...	...	...	...	...	82	...	1	5	13	6	1	9	2	8	1	18	2	2	4	9	...	1	...
...	2	...	3	1	4	1	...	11	...	1	1	1	2	...	...	...	...	1	...	1	...	...	1	2	1
...	...	3	18	20	21	17	...	79	1	1	13	3	3	7	6	4	1	7	3	2	4	10	...	5	9
...	2	3	21	21	25	18	...	90	1	2	14	4	5	7	6	4	1	8	3	3	4	10	1	7	10

TABLE
CAUSES O

List No.	Causes of Death.	Total	SEX.		AGE.												
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45
	External Causes.																
165-174	Suicide	35	27	8	...	...	...	...	...	...	...	2	3	3	1	4	3
165-166	By solid or liquid poisons and corrosive substances ...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	1	1
167	By poisonous gas	11	8	3	...	...	...	...	...	...	...	...	...	1	...	1	1
168	By hanging or strangulation ...	6	6	...	...	...	...	...	...	...	...	...	...	1	...	...	...
169	By drowning	9	4	5	...	...	...	...	...	...	...	2	2	1	1	...	...
170	By firearms	2	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...
171	By cutting or piercing instruments	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
172	By jumping from high places...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
173	By crushing	2	2	...	...	...	...	...	...	...	...	...	1	...	...	...	1
174	By other means	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	...
175-196 201-203	Violent deaths excluding suicide and homicide	66	43	23	1	...	...	2	3	2	1	3	5	4	7	3	3
175	Food poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
176	Poisoning by venomous animals..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
177	Other acute accidental poisonings (not by gas)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
178	Conflagration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
179	Accidental Burns (conflagration excepted)	6	3	3	...	...	...	1	1	...	1	...	1	...	...	...	...
180	Accidental mechanical suffocation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181	Accidental absorption of irrespirable or poisonous gas ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...
182	Accidental drowning	3	1	2	1	...	...	...	...	...	...	...	...	1	...	1	...
	Accidental injury :—																
183	By firearms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
184	By cutting or piercing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
185	By fall	15	8	7	...	...	...	1	...	...	...	...	1	...	2	1	...
186	In mines and quarries	1	1	...	...	...	..	...	...	...	...	...	...	...	...	...	.
187	By machinery	3	3	...	..	...	...	...	...	..	...	1	...	...	1	...	...
188	By other forms of crushing, (vehicles, railways, etc.) ...	34	26	8	...	...	...	...	2	2	...	2	3	3	3	...	2
189	Injury by animals (poisoning excepted)...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
190	Wounds of war	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
191	Execution of civilians by belligerent armies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
192	Hunger or thirst	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
193	Excessive cold	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
194	Excessive heat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
195	Lightning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
196	Electricity (lightning excepted)...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
197-199	Homicide	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
197	By firearms	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
198	By cutting or piercing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
199	By other means	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	Infanticide (under one year) ...	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...
201	Fracture (cause not specified) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
202	Other and unstated forms of accidental violence	2	...	2	...	...	...	...	..	...	...	...	...	...	1	...	1
203	Violent deaths of unstated nature	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Deaths from External Causes	102	70	32	1	...	...	2	3	2	1	5	8	7	8	7	6
	Ill-defined Diseases.																
204	Sudden death	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
205	Cause of death unstated or ill-defined	2	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...
	(1) Heart failure (1—70 years)	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
	(2) Other ill-defined causes ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(3) Cause not specified	1	1	...	...	...	..	...	...	...	...	...	...	1	...	...	...
	Total Deaths from Ill-defined Diseases	2	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar Lever-c-Brhtmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
4	4	2	2	...	...	...	...	35	...	...	3	3	...	7	3	3	...	5	...	2	2	4	...	2	1
...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	...
3	1	2	...	...	...	...	...	11	..	...	2	2	...	2	...	...	...	2	...	...	...	1	...	1	1
...	3	...	1	...	...	...	...	6	...	...	1	1	...	1	...	...	...	1	...	...	...	1	...	1	...
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5	5	3	1	2	3	...	6	60	2	1	9	7	2	7	2	7	2	5	1	...	3	10	1	1	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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1	5	2	...	1	...	...	2	32	2	1	5	4	...	3	2	3	1	...	1	...	2	6	1	...	3
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9	9	5	3	2	3	...	6	96	2	1	12	10	2	14	5	10	2	10	1	2	5	14	1	4	7
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TABLE

CAUSES OF

List No.	CAUSES OF DEATH.	Total	SEX.		AGE.													
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	
1-69	**General Diseases**	589	281	308	9	11	7	3	4	13	7	18	26	19	24	32	28	
70-86	**Nervous System, etc.**	187	96	91	6	5	2	1	1	4	2	2	5	4	6	5	6	
87-96	**Circulatory System**	589	269	320	...	...	...	...	...	2	2	2	3	6	7	7	13	
97-107	**Respiratory System**	298	145	153	27	10	4	3	6	5	2	3	2	3	7	7	8	
108-127	**Digestive System**	127	64	63	31	2	1	...	1	2	3	...	1	1	2	7	8	
128-142	**Genito-urinary System, etc. (Non-puerperal)**	145	76	69	2	...	...	...	...	1	2	2	5	1	7	5	4	
143-150	**The Puerperal State**	17	...	17	...	...	...	...	..	...	...	...	3	4	3	6	1	
151-154	**Skin and Cellular Tissue** ..	11	6	5	...	...	...	...	...	...	..	...	...	...	...	...	...	
155-158	**Locomotor System, etc.** ...	3	2	1	...	...	...	...	...	...	...	1	...	...	..	...	...	
159	**Malformations**	17	11	6	17	...	...	...	...	...	...	...	...	...	...	...	...	
160-163	**Diseases of Early Infancy** ...	82	48	34	82	...	...	...	...	...	...	...	...	...	...	...	...	
164	**Old Age**	90	54	36	...	...	...	...	...	...	...	...	...	...	...	...	...	
165-203	**External Causes**	102	70	32	1	...	...	2	3	2	1	5	8	7	8	7	6	
204-205	**Ill-defined Causes**	2	1	1	...	..	...	...	...	...	...	...	...	1	1	...	...	
	GRAND TOTAL	2259	1123	1136	175	28	14	9	15	29	19	33	53	46	65	76	74	

I.—*Continued.*

DEATH, 1930.

0 to 5	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
1	70	69	59	45	37	10	5	34	555	20	35	88	31	14	62	29	44	12	72	15	12	31	57	15	26	26
0	9	22	28	29	16	12	4	15	172	6	4	27	19	7	14	7	9	6	25	10	6	11	15	1	10	10
9	51	85	95	119	85	33	25	...	589	8	37	78	47	13	53	30	56	13	59	25	13	26	59	19	32	21
1	22	23	32	38	37	21	2	50	248	10	23	48	22	11	32	16	25	6	26	10	4	15	29	5	9	7
9	13	12	8	9	7	3	3	35	92	5	7	17	11	5	8	1	11	3	12	4	3	4	22	4	3	7
7	16	21	24	23	13	6	1	2	143	6	6	27	7	2	9	9	9	8	15	6	4	4	13	3	7	10
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1	9	9	5	3	2	3	...	6	96	2	1	12	10	2	14	5	10	2	10	1	2	5	14	1	4	7
.	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
8	194	244	254	288	220	115	58	241	2018	62	121	330	162	60	212	106	181	54	250	77	51	107	234	50	102	100

Causes of Death at Different Periods of Life in the County Borough of Bolton—1930.

(Statistics supplied by the Registrar-General).

Causes of death	Sex	All Ages.	Under 1 year	1 and under 2	2 and under 5	5 and under 15	15 and under 25	25 and under 45	45 and under 65	65 and under 75	75 and upwards
ALL CAUSES	M	1098	89	13	25	28	39	118	354	276	156
	F	1133	80	14	13	20	46	137	327	267	229
Enteric fever	M	1	...	...	...	...	...	1	...	...	...
	F	...	...	...	...	...	...	...	...	...	...
Smallpox	M	...	...	...	...	...	...	...	...	...	...
	F	...	...	...	...	...	...	...	...	...	...
Measles	M	3	...	...	1	2	...	...	...	...	...
	F	2	...	1	...	1	...	...	...	...	...
Scarlet fever	M	2	...	...	1	...	1	...	...	...	...
	F	2	1	...	...	1	...	...	...	...	...
Whooping cough	M	2	2	...	...	...	...	...	...	...	...
	F	6	1	1	3	1	...	...	...	...	...
Diphtheria	M	2	...	...	2	...	...	...	...	...	...
	F	1	...	...	1	...	...	...	...	...	...
Influenza	M	25	...	...	...	...	3	7	7	6	2
	F	18	...	...	1	...	...	7	4	2	4
Encephalitis lethargica	M	2	...	...	...	...	...	2	...	...	...
	F	4	...	...	...	1	...	1	2	...	...
Meningococcal meningitis	M	2	2	...	...	...	...	...	...	...	...
	F	...	...	...	...	...	...	...	...	...	...
Tuberculosis of respiratory system	M	60	...	1	...	...	10	23	23	2	1
	F	53	...	...	...	...	17	26	10	...	...
Other tuberculous diseases	M	18	...	1	3	4	2	1	5	1	1
	F	19	1	3	1	2	6	2	2	1	1
Cancer malignant disease	M	105	...	...	...	...	1	3	55	33	13
	F	133	...	...	...	...	...	10	69	34	20
Rheumatic fever	M	...	...	...	...	...	...	...	...	...	...
	F	4	...	...	...	3	...	1	...	...	...
Diabetes	M	13	...	...	...	...	1	1	6	2	3
	F	20	...	...	...	...	1	1	9	7	2
Cerebral hæmorrhage, &c.	M	55	...	...	...	...	...	3	19	20	13
	F	66	...	...	...	...	...	2	16	30	18
Heart disease	M	208	...	...	...	5	3	12	78	75	35
	F	253	...	...	...	2	3	21	85	79	63
Arterio-sclerosis	M	71	...	...	...	...	...	1	15	40	15
	F	84	...	...	...	...	...	2	18	28	36
Bronchitis	M	45	3	...	...	1	...	...	13	12	16
	F	72	4	1	1	...	...	2	15	25	24
Pneumonia (all forms)	M	72	10	3	9	4	...	7	26	8	5
	F	51	8	3	2	1	3	7	11	10	6
Other respiratory diseases	M	18	1	1	...	...	1	4	7	2	2
	F	11	...	1	...	...	...	3	3	4	...
Ulcer of stomach or duodenum	M	12	...	...	...	...	...	4	5	3	...
	F	1	...	...	...	...	...	...	1	...	...
Diarrhœa, &c.	M	12	9	1	...	...	...	...	...	1	1
	F	19	15	...	...	...	...	1	2	...	1
Appendicitis and typhlitis	M	4	...	...	...	2	1	...	1	...	...
	F	6	...	...	...	...	...	1	3	...	2
Cirrhosis of liver	M	7	...	...	...	...	...	...	4	2	1
	F	3	...	...	...	...	...	1	2	...	...
Acute and chronic nephritis	M	49	...	...	...	3	3	2	19	21	1
	F	46	...	...	...	...	3	3	18	12	10
Puerperal sepsis	F	7	...	...	...	...	3	4	...	...	...
Other accidents and diseases of pregnancy and parturition	F	12	...	...	...	...	...	12	...	...	...
Congenital debility and malformation, premature birth	M	51	51	...	...	...	...	...	...	...	...
	F	34	33	...	...	...	...	...	1	...	...
Suicide	M	26	...	...	...	...	2	8	12	4	...
	F	8	...	...	...	...	3	3	2	...	...
Other deaths from violence	M	46	...	...	4	2	5	14	15	2	4
	F	27	...	...	2	1	3	3	8	6	4
Other defined diseases	M	186	11	6	5	5	6	24	44	42	43
	F	170	17	4	2	7	4	23	46	29	38
Causes ill-defined or unknown	M	1	...	...	...	...	...	1	...	...	...
	F	1	...	...	...	...	...	1	...	...	...

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